A Performance/Lecture Contrasting the German Baroque and French Romantic Organs/Registrations through Select Repertoire.

Prepared by

Camille G. DeVaney

June 26, 2007

The University of North Carolina at Pembroke

In partial fulfillment of the requirements for the

Master of Arts in Music Education

Approved by:

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Abstract

The final lecture project for the Masters of Arts in Music Education Degree is a combination of an organ recital and thesis paper. The music for the recital is German Baroque and French Romantic. The paper explains differences and similarities between the German Baroque and French Romantic organ specifications. Information about the literature and composers are in the thesis. Problems in registration for the pieces on the contemporary performance organ are included in the research and summarized by the writer. The lecture/recital is to be performed on the Schantz organ at the Laurinburg Presbyterian Church (see Appendix N).

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Review of Related Literature

The research is on topics in five areas: the German Baroque organ, the French Romantic organ, the performance organ, select composers, and select performance repertoire. Most of the research materials describe the development and the design or specifications of the organ. (The specifications of an organ include the stop list, the number and type of ranks, divisions, and number and designation of manuals.)

Registration

The process of selecting different tone colors and pitch levels on an instrument is known as "registration" (Appendix A). These are selected by means of separate stops or registers. Each of the registers controls the on or off position for a series of pipes, grouped so that one or more pipes will respond to each key on a manual or pedal keyboard. The term "organ registration" refers to the appropriate combination of organ stops, as well as the tonal effect of any combination for a particular piece of music (Williams, 1988, p. 253).

General History

The history of organ registration is based on the changing styles in organ building. An important development was the transition from the stopless organ, the *Blockwerk*, to instruments equipped with selective registers. In the *Blockwerk* of the early fifteenth century, the *plenum* was the only registration. The *plenum* is the mixture of pipes which gives the sounds of fundamentals and harmonics. The organ had no divisions of swell, great, or choir. The introduction of the second manual division *(Positif-de-dos*, or *Rückpositiv*) and *Trompes* (*Bordunen*) made some variety in registrations possible (Williams, 1988. p. 253). *Trompes* were the large open bass pipes placed away from and

on either side of the Grand organ (Williams, 1988, p. 289). Selections still could not be made within each section of the organ. Toward the end of the fifteenth century, there were one-manual organs in Italy whose *plena* had been divided into separate stops, each controlling a rank of pipes. This trend traveled north through France and Germany. For the first time, organists were able to choose their registrations. Builders often gave them advice about the best combinations available. The earliest known organ music and instructions for registration date from the fifteenth century. Until the beginning of the seventieth century, there was no attempt to identify any registration with a certain musical texture (Williams, 1988, pp. 253-254).

Mersenne, in his *Harmonic universelle* (1636-1637), wrote that there are many possible combinations of stops for an instrument.

> Among the many possible combinations are several which are disagreeable. This means that a player of good taste should refer to Mersenne's advice to find the most agreeable registrations, and learn enough about the tonal design of the organ to create his own registrations by experimenting at the keyboard (Williams, 1988, p. 254).

In the sixteenth century, organists were usually given a list of registrations of the organ by the builder. This list was the first to describe the *plenum* (called *plein jeu* or *fourniture*). "The *plenum* was the ancient *Blockwerk* split into three or more registers controlling doubled or tripled ranks of 16', 8', and 4' (Appendix A) with two mixtures, called *Fourniture* and *Cymbale*" (Williams, 1988. p. 254). These mixtures were not useful by themselves but were needed to make the *plenum* complete. "In addition to the *plenum*, other registrations were developed for the newly invented stops of flutes, reeds, and bells with names of *Nasard, Doublette* and *Cromorne*" (Williams, 1988, p. 254).

The Italians were the first to use spring and slider chests that made registration possible on the organ. They stressed the importance of the correlation between certain registrations and suitable musical textures. "Italian organ music was seldom annotated with the composer's instructions for registration" (Williams, 1988, pp. 255-256).

In the early seventeenth century,

> no advice for registration exists for the organs built by the Scherer family of Hamburg, and their successors in north-west Germany, but contractual documents and the surviving organs give information for the registrations available for the music composed at the time (Williams, 1988, p. 257).

In the early eighteenth century, Bach's directions for registration of his organ compositions are sparse. A few pieces suggest stops and others list pitch levels such as 8' or 4' (Williams, 1988, p. 259).

Williams credits the French organists for the refinement in registration for composed music. Since the mid-seventeenth century, they have indicated specific registrations and musical textures for their organ pieces. The German composers left performers free to choose their own registrations based on the instrument's restrictions. The classical French repertory was forgotten during the nineteenth century because French organs no longer made the sounds that could articulate that repertoire (Williams, 1988, p. 260).

"Technological advances during the nineteenth century transformed the craft of organ building into an industrial pursuit" (Williams, 1988. p. 262). Organ builders competed by displaying their latest mechanical innovations in the great industrial exhibitions in London and Paris. The old concepts of the *Blockwerk* that had limited the musical resources of the organ were abandoned. The expanded tonal capacity resulted from the application of pneumatic, and later electrical, devices. This relieved the key-

action, and provided limitless wind supplied by steam engines and eventually by electrical blowers which fed into large reservoirs. Because of these advances, organists changed their previous ideas regarding registration. The *plein jeu* was replaced by the reed-dominated *tutti*. Mutations were replaced by ranks of fundamental pitches: open flutes, harmonic stops, and broad strings (Williams, 1988, pp. 262-263). "Wind pressures rose continually, but no one thought that the 1920 American organs would be built demanding wind more than ten times as strong as the nineteenth-century maximum" (Williams, 1988, p. 263). Pneumatic motors were installed to provide the player with pre-set combinations (Ste. Sulpice, Paris, 1863 (Appendix C) (Williams, 1988, p. 263).

> The motors also enabled smooth crescendos from soft stops behind closed Venetian shutters to the roar of the *tutti*. Registration, by *ventil* pedals in France, by *Rollschweller* (crescendo pedal) in Germany, and by electrically operated combinations in England and the USA, was gradually reduced from an art to a formula (Williams, 1988, p. 263).

The registrations suggestions found in Romantic organ music began with enclosed 8' stops, which were then combined with unenclosed 8' flue stops in the manuals and 16' and 8' stops of the pedal always coupled together - the basic stops for the building of a *tutti* (full organ). In addition, foundation stops of 16', 8', and 4' on all keyboards were added, followed by reeds and mixtures. The swell shades were initially closed but were fully opened by the end of the first section building up to the most powerful unenclosed sounds. The *Rollschweller*, or crescendo pedal, added or subtracted the stops gradually in a predetermined order. Franck, Widor, and their successors wrote specifically for Cavaille-Coll's system of stop-controls, which consisted mainly of mechanical devices for the adding or blocking of wind from the foundation and reed sections of the chests (Williams, 1988, p. 263). The Survey of the Organ chart (Appendix D) gives an

overview of the development of the organ (Klotz, 1969, pp. 138-139).

German Baroque Organ

The basic design of the German Baroque or *Werkprinzip* organ was established by the beginning of the fifteenth century, but was not fully developed until the years 1550-1750. In the *Werkprinzip* instrument, a *positiv* or chair organ is added to the main case along with pedal-towers. A basic *Werkprinzip* has two contrasting manuals, with the depth and richness of the great organ balanced against the brilliance and immediacy of the *Positiv*, the solo manual. The great organ and the chair organ complement each other. They have separate identities and yet are perfectly harmonious when combined. The chair organ has its own case, separate from the great organ and was usually placed behind the organist's back or bench. This manual was used to accompany the choir because of its position and lighter sound (Wills, 1984, p. 298). The chair organ could be coupled to the Great for a full chorus. The *Werkprinzip* instrument reached its highest point of development in the work of Arp Schnitger (1648-1719) (Appendix E) (Wills, 1984, pp. 51-52).

The Organs of J. S. Bach

Arguably, Johann Sebastian Bach may be considered the greatest composer of the Baroque period and also the greatest composer of organ music (Wills, 1984, p. 51). His music has been handed down with limited assignment of tone-color, registration, articulation markings, tempo, and dynamics (Keller, 1967, p. 39). Few performance markings or registration suggestions are found in the original sources of Bach's music. A change of manuals in Bach's music is used for sectional contrast. Registration for authentic interpretation of Bach's music on a modern organ is often difficult because of

changes that have occurred since 1750 (Keller, pp. 38-47).

Churches and organs where Bach was employed

Bach's Tenure	Church/Town	Year Built	Builder
1703-1707	Ste. Bonifacekirche, Arnstadt (Appendix F)	1703	Johann Friedrich Wender
1707-1708	Ste. Blasius, Mühlhausen (Appendix G)		
1707-1717	Schlosskirche (Castle Church), Weimar (Appendix H)	1658 1720 rebuilt	Ludwig Compenius Heinrich Nicolaus Trebs
1717-1723	Agnuskirche, Cothen		
1723-1750	Thomaskirche, Leipzig (Appendix I)	1489 1722 rebuilt	Johann Scheibe

Although J. S. Bach did not travel far from his home at Eisenach, his music reflects the diverse traditions of North-German organ playing by the preceding generation and a profound knowledge of French and Italian idioms (the dominant national styles of the eighteenth century) (Thistlewaite, 1998, p. 236). Bach was familiar with the standard German *Werkprinzip* instrument. One example is the Arp Schnitger instrument at the Jakobikirche at Hamburg (Appendix E). During Bach's life, changes in ideas about registration occurred during the first half of the eighteenth century. Early in the century, organists would not have duplicated pitches with different families of stops. The stops did not blend and the air supply did not allow the duplication. Twenty years later, organists were using complete flue choruses, principals, flutes, and strings for the plenum, instead of a Cornet or *Krummhorn*. Solo lines were thickened with 8' and 4' flues and 8' reeds (Wills, 1984, pp. 64-65).

In many ways, the organs of Bach's main area of activity, Thuringia, Weimar and Leipzig, showed the same kind of influences as his music: a basic German traditionalism tempered with French color and Italian fluency. Bach himself is known to have been well acquainted with organ music of many countries and periods (Williams, 1988, pp. 129-130).

The period in which Bach worked was one of a changing aesthetic for organs when the organ became increasingly important for congregational hymn singing. This required big chests, large bellow capacity, many 8' stops (including those of string tone), a powerful 16' pedal tone for "gravity" and a range of sound characterized more by extremes of loud and soft than by a variety of colors (Williams, 1988, pp. 129-130).

Many details of the stop-lists, registration, and tonal effect of J. S. Bach's organs at Arnstadt (1703–1707) (Appendix F), Mühlhausen (1707–1708) (Appendix G) and Weimar (1708–1717) (Appendix H) remain unclear, but restorations during the twentieth-century of organs by Trost and other builders have helped in the understanding of the organs and Bach's ideas. The Arnstadt organ can be perceived as a typical organ known by the Pachelbel school and Bach's family. The particular kind of second manual on this instrument, the pedal department, and the range of 8' manual colors had long been traditional in this part of Germany. The Weimar court chapel organ was very similar (Williams, 1988, pp. 130-131).

Larger church organs began to have new attitudes towards the *plenum*. When Bach was a student in Lüneburg in 1700 or visited Lübeck in 1706, organists there would not have mixed the families of organ stops by drawing more than one rank of any given pitch even on the larger organs. In Lüneburg, Lübeck, and Hamburg, Bach would have

heard organs with *Rückpositiv*, but, after about 1710, such divisions were rare in new instruments in his own area and further south. Some cities had not known them since about 1650. The *Rückpositiv* at Mühlhausen already had a stop-list of 8', 8', 4', 4', 2', 2', 1 1/3', II and III (Appendix G) which was quite different from the bright, colorful manual of Dutch and French organs. Where gallery space was sufficient, builders preferred to have the second-manual chests within the Great case, usually above the Great. The resulting *Oberwerk* was thus different in origin from that of Niehoff and Schnitger. At the same time, pedals became progressively less able to provide solo color for *cantus firmus* music and organs took on a stereotyped character that varied only if the builder was sensitive to different voicing and scalings demanded by different church acoustics (Williams, 1988, pp. 131-133).

The privileged organ builder for the court of Saxony was Gottfried Silbermann, a native of Saxony who was an apprentice to his elder brother Andreas in Alsace. He made friendships with composers such as Kuhnau and Bach. Silbermann's early organ in Freiberg Cathedral, Lower Saxony (1710–1714; now restored), already demonstrated many of these developments. Here was not a mass of clumsy auxiliary stops but a unique blend of Saxon and Alsatian-French elements, full of well-thought-out balance between the three manuals, and implying a mode of registration needing to be learned by the organist. Silbermann's voicing is strong, particularly in the Principals. His smaller village organs have great power and energy (Williams, 1988, p. 133). As in most of the organs frequently played by Bach, Naumburg (Appendix J) had several string-toned stops, either narrow cylindrical or conical. Various builders and organist, including Bach, suggest that they were used not only in chorale preludes, but in continuo work.

Tierce ranks, alone or with the *Sesquialtera-Cornet*, were indispensable for solo melodic lines in an organ chorale. Manual reeds were never numerous, and except for the *Vox humana* and *Krummhorn*, were for chorus purposes. Pedal reeds at 16', 8', or both are also found in organs of moderate size. Even at Naumburg, the reeds accounted for less than ten percent of the manual stops. The mixtures at Naumburg were more in the bright German tradition than Silbermann's *plein jeu*, and the pedal reeds (32', 16', 8', 4') had some of Silbermann's momentum. A contemporary critic of one of Hildebrandt's organs in Dresden thought its tone was dull and heavy, caused by increased wind pressure, higher cut-ups, and new voicing methods. Such factors were characteristic of the new organs of the 1730s and 1740s and "gravity" in an organ was praised by Bach and others (Williams, 1988, pp. 133-135).

Because of the many changes in German organ design from 1700 to 1750, Bach left only a few registrations, and those are only of a general nature. For a concerto or a prelude and fugue, it is rarely clear on whose authority the manuals (and particularly the manual changes) have been specified in the manuscript copies. The subject is open to many solutions and suggestions. Some think that none of the organs that Bach played would make his organ music sound its best or be suitable to the style and genre that Bach wanted (Williams, 1988, p. 135).

Silbermann Organs

Gottfried Silbermann's organs used an *Oberwerk* (placed above the *Hauptwerk*) instead of a Chair Organ, and often featured very small pedal divisions. The organ at Fraureuth (see Appendix K) exhibits the typical Silbermann blend of central German and French elements. It was built between 1730 and 1742. Bach was very interested in the

French school and in Silbermann's instruments. It may be that his unusual registrations, which surprised his contemporaries, were derived from his knowledge of French practices. The Silbermann organs were capable of a wide variety of color, but were characterized above all by beauty of tone, and were highly suitable for music of a lyrical cast, with textures much influenced by Italianate string writing (Wills, pp. 65-66).

The Silbermann brothers, Andreas's and Gottfried, are famous for their organs in Alsace, in Saxony, and in the Dresden districts. Three out of four of Andreas' sons also built organs. The Silbermanns developed ideas from Casparini, an organ builder whom Andreas had assisted in organ building in Goerlitz, Germany. These characteristics include:

- The careful grouping of stops into narrow and wide scales was abandoned and many varieties of scales were employed.
- Wood pipes were used for many of the pipe ranks and the lowest notes of the 32 foot and 16 foot ranks on the pedal organ were made of wood.
- Larger proportions of tin were used in the pipe metal than was common in the Schnitger organs, and the tone of the pipes was brighter because of this.
- String tone and undulating stops became a feature of the instrument and paved the way for the later romantic movement in organ building.
- The cornets made from ranks of pipes in harmonic series gave a striking imitation of reed tone.
- The general treatment of the tone mass was more powerful and smoother than that of Schnitger's organs (Sumner, 1962, pp. 93-94).

Schnitger Organs

Sumner reported that the finest organ that J. S. Bach ever played was the Schnitger organ in the St. Jakobi Church, Hamburg (Appendix E). (Bach wanted the position of organist there, but someone else was appointed). Schnitger's organs always had more capacity for air to be blown into the pipes. The following chart gives examples of the Schnitger bellows (Sumner, 1962, pp. 89-90):

Chart of Schnitger organ bellows

Organ	Stops	Bellows	Size
St. Nicholas, Hamburg	67 stops	16 bellows	10 ft. by 5 ft.
St. Nicholas, Berlin	40 stops	8 bellows	9 ½ ft. by 5 ft.
Buxtehude Church	35 stops	6 bellows	8 ft. by 4 ft.

The majority of Schnitger organs do not have wooden pipes. Metal pipes are easier to voice than those of wood. The lead-tin alloy is better than the glued wood in the damp climate of Northern Germany. The flutes and cornets were made of metal consisting of a large proportion of lead. Brass was often used for the tubes of the smaller reeds. Light-winded flute and gedeckt pipes of the Baroque type can be made of copper, but there is no evidence that Schnitger used this material. In the twentieth century, many builders used copper for the pipe-work of neo-Baroque organs (Sumner, 1962, p. 90).

The pitch of Schnitger's organs was approximately three-quarters of a tone higher that the present pitch of A=440. The organs were tuned to mean-tone temperament, in which the octaves and ascending thirds were tuned true, and the fifths were narrowed.

Modulation into some flat and sharp keys was impossible with this tuning, but the effect of pure thirds was satisfactory. By the early eighteenth century, many organs were being tuned in equal temperament (Sumner, 1962, p. 90).

French Romantic Organs

In the seventeenth-century, the French organ was very different from the German organ. The French *plein jeu* was derived from the medieval *Blockwerk*, as was the German *organo pleno*, but the German chorus, colored by lightly voiced reeds, was well suited to polyphony (Wills, 984, p. 61). The French preferred to separate the mixture chorus from the reeds and favored a more richly harmonic texture for the *plein jeux*. The *grand jeu*, the reed chorus, was reserved for fugues. The separation of the *plein jeu* and *grand jeu* is an important aspect of the French classical, but in the nineteenth-century organ, the combination of the two choruses created the unique chorus of the French romantic instrument under Aristide Cavaillé-Coll (see Appendices L and M) (Wills, 1984, p. 61).

Cavaillé-Coll Organs

The most important organ builder of the French Romantic Period, Aristide Cavaillé-Coll (1811-1899), is said to have launched his reputation with the organ he built in 1841 for the Abbey of St. Denis near Paris (Appendix M). This instrument signaled the beginning of the symphonic style of organ building in France (Thistlewaite, 1998, p. 267). Cavaillé-Coll also built the organ at Ste. Clotilde, Paris, 1859, where Franck was organist for 31 years (Appendix L) (Arnold, 1973, p. 189).

The standardization of French registration in the nineteenth century was attributed to Aristide Cavaillé-Coll (Appendices L and M). In 1833, Cavaillé-Coll was still basing

his work on the French classical tradition described previously. In 1841, he introduced the newly invented Barker lever that made a less straightforward layout of chests possible. Wind pressures were increased, and a wider scaling than the classical French was adopted. *Scaling* is the relationship between the diameter of a pipe and its length. Wide-scaled pipes produce a stronger fundamental tone; narrow-scaled pipes have a higher harmonic development, at the expense of fundamental tone. In the Renaissance and Baroque instruments, all of the principal ranks are often the same scale, regardless of pitch. This means that all notes of the same pitch will be of the same diameter. In the nineteenth century, many builders made their 8' principals on a larger scale than those of higher pitch. (Many present-day builders also vary scales somewhat in their principal choruses.) The size of the building and the size of the organ, are factors in the general scaling pattern (Williams, 1988, p. 326). Cavaillé-Coll introduced double-length harmonic ranks, especially reeds, and the chorus included strings, flutes, principals or montres, and reeds. *Double-length harmonic* means that the pitch is an octave lower than usual resulting from the double length pipe (Williams, 1988, p. 273). An important innovation was the placing of families of stops onto separate chests each with its own wind pressure. *Ventils*, operated by pedals, enabled the organist to prepare registrations that could be rapidly added or subtracted as required (Wills, 1984, p. 99). This is a precursor of the capture systems (pistons) found on modern instruments.

Aristide Cavaillé-Coll began learning the art of organ building, as a teenager, from his father, Dominique. They both wanted to make the organ more expressive. Aristide showed early gifts for mathematics, physics, and engineering. Because of this, he was introduced to physicists Savart and Cagniard Latour, and musicians Cherubini,

Berton, and Baron de Prony. Berton was the chairman of a commission that was to select the builder and decide all details for a new and large organ for the basilica of St. Denis, near Paris (Appendix M). Because Cavaillé-Coll impressed Berton with his obvious competence and engineering ability, he was asked to submit plans for the organ. In three days, he produced and presented a complete scheme for the new organ to Berton and the commission. In spite of the fact that four leading organ builders in France had submitted plans, the contract was awarded to Cavaillé-Coll, age twenty-two. His father supported him in the building of the organ which was not finished until 1841 (Sumner, 1962, pp. 221-222). The Barker pneumatic lever was a device to lighten key action invented by Charles Spackman Barker in Paris in 1839 (Williams, 1988. p. 294). It was first used by Cavaillé-Coll in the St. Denis organ and became a standard for all the larger French organs for nearly a century. The St. Denis organ showed the engineering qualities which distinguished Cavaille-Coll's work (Sumner, 1962, p. 222).

Cavaillé-Coll used different wind pressures for flue and reed stops, and increased wind pressure to maintain the power of the trebles. He is known for the voicing of orchestral reeds and imitative string-toned stops. He devised and improved new types of flute stops. He would use pipes of the same size bored with holes at different distance along the pipes in order to make a musical scale. The use of mutation ranks by organ-builders until the time of the French Revolution produced non-imitative and characteristic organ tone, but Cavaillé-Coll used these ranks of pipes for the synthesis of orchestral colors. The full organ in his instruments was a rich sound of reed tones of a free type, enriched by mixture stops. The double-fold reservoirs were first used by Alexander Cumming (1733-1824) and introduced into France by John Abbey. By using the double-

fold reservoirs, Cavaillé-Coll was able to plan sufficient blowing equipment to produce wind of several pressures in ample quantity for the largest demands on his organs, even with all the couplers drawn. He provided inter-manual couplers and couplers from manual to pedal. The *plein jeu* of the old great organs vanished. Cavaillé-Coll added 16', 8', and 4' reeds to the grand organ, and the small recit was enlarged and made expressive by being placed in a swell-box (Sumner, 1962, pp. 223-224).

Cavaillé-Coll standardized his organ and consoles. This enabled composers to write their music with an idea of registration and sounds from the organs. In a four manual organ, the order from lowest to highest was: grand, positif, recit expressif, bombarde. The *bombarde* controlled loud reeds and sometimes mixture stops. In most of the larger church organs and some small instruments, the console was detached from the instrument so that the organist sat with his back to the organ and could look over the console into the church. The *ventil* system of stop control was used in many of the larger organs. When a stop was drawn at the console, nothing happened until the air was admitted to the drawstop by pressing a *ventil* pedal or by drawing a *ventil* knob. This enabled the organist to prepare stop selections on different manuals of the organ and select them when the registration was needed (Sumner, 1962, pp. 224-225).

Over six hundred organs built by Cavaillé-Coll have been restored. In Paris, the organs at Notre Dame, Saint-Sulpice, La Madeleine, Sainte-Clotilde, Saint-Vincent de Paul, La Trinité, and Saint-Francois-Xavier retain the tonal qualities which Cavaillé-Coll gave them. The changes made to these organs have resulted from restorations and small additions, but their basic characteristics have not been altered (Sumner, 1962, p. 225). The introduction of the pneumatic lever, followed by various tubular-pneumatic actions,

lightened the touch of the keys to that of a grand piano. There were new devices for changing the stops in order to change the registration quickly (Sumner, 1962, p. 226).

French composers, such as Franck, Widor, and Vierne, based their works on evolving tonal capacity and mechanism of the instrument. The *Grand Orgue* dominated, but the term "terraced dynamics" was correctly applied to the nineteenth-century French school of organ design. "Usually only three manuals were required: *Grand*, *Positif,* and *Récit*, placed in ascending order, but giving a descending dynamic spectrum" (Wills, p. 100). The *Grand Orgue* was a combination of the classical *plein jeu* and *grand jeu.* The reed chorus dominated, with the mixtures and foundation stops providing warmth and support. The *Positif* was based on a secondary level of foundation stops with a string-biased sonority and chorus reeds 8' and 4', a solo reed of a *Cromorne* or a *Basson-Hautboy*. The *Récit* was reed-based, like the *Grand Orgue*, but much lighter in tone and capable of a relative *pianissimo* with the box closed (Wills, 1984, pp. 99-100). The *Récit* box is an enclosure with movable shutters controlled from the console to vary the loudness of the pipework within (Williams, 1988, p. 332). The foundation stops on the *Récit* were string-based, but added Flutes 8', 4', and 2 2/3', *Octavin* 2', *Basson-Hautboy*, and *Vox Humana*. A chorus reed was usually omitted. An example of a build-up through the three manuals would be:

- *Récit* – Foundations and Reeds 8' and 4' with box closed for *pianissimo*
- *Positif* – Foundations and 8' and 4' with *Récit* coupled for *mezzo piano*
- *Grand Orgue* – Foundations 8' and 4' with *Positif* and *Récit* coupled for *mezzo forte*
- *Récit* box opened and *Positif* reeds added for *forte*

- *Grand Orgue* reeds and mixtures added for *fortissimo*
- *Pédale* reeds added *fff* (Wills, 1984, pp. 99-100).

Recital Repertoire and Composers

Praeludium in A Minor, BWV 569 by Johann Sebastian Bach (1685-1750)

Johann Sebastian Bach was born at Eisenach into a family which had supplied musicians to the churches and town bands of Thuringia for a century and a half. Bach was an orphan at ten and was raised by an older brother, Johann Christoph in Ohrdruf. Johann Christoph was an organist and prepared Johann Sebastian as a musician. At age eighteen, Johann Sebastian was appointed as organist at St. Boniface, a church in Arnstadt. Bach married his cousin, Maria Barbara, while serving as organist at St. Blasius Church, Mühlhausen (Henshaw). After one year there, he received his first important post as court organist and chamber musician to the Duke of Weimar. During this time, he became a renowned organ virtuoso. At Cöthen, Bach served a prince who was partial to chamber music. During the years there (1717-1723) he produced suites, concertos, sonatas for various instruments, and an abundance of clavier music. He also composed the 6 *concerti grossi* dedicated to the Margrave of Brandenburg. Bach's wife, Maria Barbara, died in 1720. Bach then married Anna Magdalena, a young singer. Bach had twenty children, seven from the first marriage and thirteen from the second, but only half survived infancy. One died in his twenties and another was mentally deficient. Four children became leading composers: Wilhelm Friedemann, Carl Philipp Emanuel, Johann Christoph, and Johann Christian Bach. Bach was thirty-eight when he was appointed to one of the most important posts in Germany, the Cantor of St. Thomas Church in Leipzig. There, he served as music director, composer, choirmaster, and organist of St. Thomas Church for twenty-seven years, 1723-1750 (Appendix I) (Machlis, 1963, p. 427-430).

A *prelude* is a piece in imaginative style based on the continuous expansion of a melodic or rhythmic figure. The prelude originated as an improvisatory style piece for lute or keyboard. In the late Baroque, a prelude may have introduced a group of dance pieces or a fugue (Machlis, 1963, p. 412). German organ preludes of the seventeenth century frequently began in free style and ended with a short fugal section, anticipating the separation of prelude and fugue as distinct pairs in the works of Buxtehude and Bach. Other single-movement preludes may modulate continuously through keys allowing the player to "prelude" until an appropriate key is reached (Randel, 1986, p. 653).

The Praeludium in A Minor, BWV 569, an early composition, "exhibits a marked contrast between careful composition and limited inspiration, so that it is almost unique among Bach's organ works" (Keller, 1967, p. 67). "Bach creates distinctly idiomatic techniques that remain permanent artistic resources for him from then on" (Keller, 1967, p. 67). Bach distributes the beginning passage among the voices. The double pedal and elaboration of the subdominant at the end are signs of a fairly early period work (Keller, 1967, p. 67).

Wachet auf, ruft uns die Stimme, BWV 645, by Johann Sebastian Bach (1685-1750)

The *Six Chorales* (BWV 645-650), often called the "Schübler Chorales," were published after 1745 by Georg Schübler of Zella. Each one of the six is a trio arrangement made by Bach of a vocal movement from one of his own cantatas. All six are for two manuals and pedal, in which the melodies stand out distinctly from the other parts (Arnold, 1973, p. 111). "Wachet auf, ruft uns die Stimme," (Wake, Awake, for Night Is Flying) is a transcription of the tenor solo that serves as the third movement of *Cantata 140*, composed in 1731. In making these chorales as "arrangements," Bach

rarely changed a note. The thorough-bass (the chords) is the only part that is missing. The player should restore the echo in measure three and four after the original (Keller, 1967, p. 264). Bach added ornaments that are not found in the cantata. Keller suggest the tempo of a quarter note=56 (Keller, 1967, pp. 262-264). Translation of the text of the cantata movement is by Catherine Winkworth, 1829-1878 (Riemenschneider, 1941, p. 5).

> Wake, awake, for night is flying,
> The watchmen on the heights are crying;
> Awake, Jerusalem, at last!
> Midnight hears the welcome voices,
> And at the thrilling cry rejoices:
> Come forth, ye virgins, night is past!
> The Bridegroom comes, awake,
> Your lamps with gladness take;
> Alleluia! And for his marriage feast prepare,
> For ye must go to meet Him there.

As noted previously, Bach left only a few registrations and those provided only a general idea, not specifics. The published Schübler *Chorale Preludes* (*c.* 1746) make it clear whether the pedal is a 16' quasi-continuo bass line or a 4' cantus firmus melody line, but they do not specify color (Williams, 1988, p. 135).

Toccata by Eugène Gigout (1844-1925)

Eugène Gigout was born in Nancy, March 23, 1844, and died in Paris on Dec 9, 1925. Gigout was a French organist and composer who began his musical apprenticeship at the Nancy Cathedral choir school. In 1857, he went to the École Niedermeyer where he was taught by Camille Saint-Saëns and Clément Loret. After marrying Caroline-Mathilde, the director's daughter, he stayed at the École Niedermeyer to teach plainsong, counterpoint, fugue, and organ. In 1863, he was appointed organist of St. Augustin in Paris where he stayed until his death. He had to wait five years for Barker to complete

his instrument which was built using an electro-pneumatic system, unfamiliar at the time. The organ had to be reconstructed by Cavaillé-Coll–Mutin in 1899. Gigout founded a school of organ and improvisation in 1885. He succeeded Guilmant as professor of organ and improvisation at the Paris Conservatoire in 1911. His students included his nephew Léon Boëllmann, Gabriel Fauré, André Messager, Albert Roussel, and André Marchal. According to contemporaries, Gigout played in a very clean style that allowed him to perform the music of Franck with great intensity. His organ music shows characteristics derived from Bach, passages in a classical style, and symphonic effects in the grand manner, sometimes making use of plainsong. Toccata (1890) is of the same quality as similar compositions by Boëllmann, Widor, or Dubois (Sabatier, n.d., online).

> A toccata is a virtuoso composition for keyboard or plucked string instrument featuring sections of brilliant passage work, with or without imitative or fugal interludes. The principal elements of toccata style are quasi-improvisatory disjunct harmonies, sweeping scales, broken-chord figuration, and *roulades* that often range over the entire instrument. In some periods, this style is also found in pieces called prelude, *tiento*, *ricercar*, and *fantasia* (Randel, 1986, p. 859).

Prélude, fugue et variation, Opus 18, by César Franck (1822-1890)

César Auguste Franck was born December 10, 1822, in Liège, Belgium. In October 1830, his father enrolled him at the Liège Conservatoire where he rapidly gained honors for piano. From 1833 to 1835, he studied harmony with the director, Daussoigne, nephew of Méhul who had taught at the Paris Conservatoire. Encouraged by these academic successes, his father organized a series of concerts in Liège, Brussels, and Aachen in the spring of 1835. Franck's earliest surviving compositions, trivial showpieces and operatic fantasies *à la mode*, were written in connection with these and subsequent exhibitions. In May 1835, the Franck family moved to Paris. Franck studied

piano with Zimmerman and took courses in harmony and counterpoint with the renowned Anton Reicha, teacher of Berlioz, Liszt, and Gounod. He enrolled in the Paris Conservatoire on October 4, 1837, and again studied piano with Zimmerman and counterpoint with Leborne. He gained recognition for his achievements, for piano in 1838 and for counterpoint in 1840. He then studied with Berton and prepared for the *Prix de Rome*, although he did not actually enter the competition. After a year in Benoist's organ class, he was withdrawn by his father from study in order to concentrate on a career as a virtuoso and presented a concert tour in Belgium in 1843. The start of a new phase of Franck's career has been attributed to his appointment, early in 1858, as organist of the newly completed basilica of Ste. Clotilde. Assisted by the aging Lefébure-Wély, he inaugurated one of Cavaillé-Coll's (Appendix L) finest instruments on December 19, 1859 (Trevitt and Fauquet, n.d., online). Some may say he was the greatest organ composer of the French school in the nineteenth century (Arnold, 1973, p. 191). Franck was a modest man who exerted a profound effect upon his students and the development of organ music. His organ compositions were composed while considering the registration and specifications of the Cavaillé-Coll organ at Ste. Clotilde where he was the organist from 1859 until his death (Arnold, 1973, p. 191).

Prélude, fugue et variation, Op. 18, is one of Franck's loveliest compositions (Arnold, 1973, p. 192). The cantabile melody of the prelude is presented over a simple accompaniment. A short interlude of nine measures anticipates the fugue subject and returns the tonality to B minor. In the last part of the fugue, the primary musical accent seems to fall on the second beat of several successive measures. After the climactic end of the fugue, the serene melody of the prelude returns over a flowing sixteenth-note

accompaniment in the left hand (Arnold, 1973, p. 192).

For the opening *Andantino* of the prelude, Langlais suggests that a tempo for a dotted quarter note to equal 58; Tournemire, around 60; and Dupré, 63. At the end of the Prelude, Franck indicates the addition of an 8' or 4' stop to the pedal in order to bring out the theme, a direction which Dupré omits. For the *Lento*, Franck uses one of his favorite registrations: *Grand-Orgue* 16', 8', and 4' foundations; *Positif* 8' and 4' foundations; and *Recit* 8' and 4' foundations and reeds coupled. Dupré adds to this combination the 16' foundations of the *Récit*. All three interpreters recommend that the tempo of the fugue should be quarter note equals 88 and that the Variation should return to the tempo of the prelude (Archbold, 1995, p. 174).

Le Banquet céleste by Olivier Messiaen (1908-1992)

One of the most significant and influential composers of the twentieth century was Olivier Messiaen (1908-1992). He was a highly idiomatic and individualistic composer. Messiaen and his music were influenced by Dukas, Dupré, his family, Shakespeare, Claudel, Holy Scripture, birds, Russian music, plainsong, Hindu rhythms, and the mountains of Dauphine (Arnold, 1973, pp. 219-220). Except for the music composed during the period between 1945 and 1962, Messiaen's music was almost exclusively based on religious themes (Griffiths, n.d., online).

"Le Banquet céleste," composed in 1928, is one of Messiaen's earliest pieces. It is based on the text from the Gospel according to St. John, "He who eats my flesh and drinks my blood has eternal life, and I will raise him up at the last day" (John 6:64 RSV), that refers to Christ's admonishment to his disciples. At measure twelve, the pedal instructions are *staccato bref, a la goutte d'eau*, translated as brief staccato, as drops of

water that represents water being added to the wine during the Eucharist. Originally, the water was used to dilute the strong wine. Since then, it has developed a spiritual meaning. The water symbolizes the humanity of Christ and the wine symbolizes the divinity of Christ. It also represents the congregation joining their offering with Christ in the Eucharist. The registration suggested by Messiaen calls for Prestant 4' and Piccolo 1' coupled to the pedal without any pedal stops drawn until the final chord. Repetition in Messiaen's works provides "intensity and the suggestion of eternal concept which transcends time" (Arnold, 1973, pp. 219-220). The "heavenly banquet" is the Eucharist and has a very natural place during the communion of a mass. The piece is very slow so that the first chord is seven seconds. The long chords begin to function as images of eternity rather than as moments in time. In this piece, Messiaen introduces what he calls his "second mode of limited transpositions" (Griffiths, 1985, p. 29). Transpositions of this mode are limited because of its regularity. There is a repeating unit of a minor third, divided into minor-second and major-second intervals, so that every fourth chromatic transposition of the mode produces the same set of notes as the first. Contrary to a major scale which exists in twelve different transpositions, this mode has only three. The important thing about his second mode is not that its transpositions are limited but that its construction is symmetrical. This is the root cause of the limitation on transposition and also of the tonal instability that he uses in his music. The second mode lends itself to the dominant-seventh, diminished-seventh and added-sixth chords that are the supportive harmony in this piece. Messiaen also uses the tritone, not the fifth, as the interval of highest structural importance (Griffiths, 1985, pp. 29-30). The modes are also called Octatonic Mode 1 and Octatonic Mode 2. Mode 2 consists of two diminished

tetrachords, the second starting at the tritone. Mode 2 is also called the "half-step diminished scale," and is used in jazz improvisation in association with diminished seventh chords (Rumery, 1996, online).

Finale from Symphony No. 1, Opus 14 by Louis Vierne (1870-1937)

Louis Vierne was born at Poitiers in 1870, and died in 1937. He may be considered to be the outstanding organ symphonist of the early twentieth-century (Arnold, 1973, p. 212). Vierne was born with a congenital cataract condition. His sight was partially restored at the age of six. In 1880, his family moved to Paris where he studied with Franck for a short time. After Franck died in 1890, Vierne studied with Widor and served as his assistant at the Conservatoire. From 1892, he was Charles Marie Widor's substitute at St. Sulpice. In a 1900 competition with four other organists, Vierne won the post of organist at Notre Dame. At times, Vierne suffered from depression along with near-blindness, ill health, bereavement from the death of his son and brother in World War I, and continued financial difficulties. Benefactors and wealthy patrons subsidized his work for years. He was a fine player with a brilliant technique even though susceptible to stage fright. Vierne suffered a fatal heart attack at the organ in the middle of a recital at Notre Dame in 1937 (Smith, n.d., online).

Vierne developed his own distinct, but not extreme, harmonic and melodic idioms. His music is technically demanding, sometimes pianistic, and is consistently orchestral in character. Vierne's compositions are original, well developed, vigorous, and tuneful. Most of them are concert music. His harmonies are rich and show a skillful use of contrapuntal devices. His striking themes are evenly balanced (Arnold, 1973, p. 212). Widor's influences on Vierne are shown by his partiality to inverted pedal-points.

His frequent use of the canon, his skillful combination of themes, and his excellence in development are attributed to Franck (Grace, 1919, p. 169).

Vierne's *Symphony I*, Opus 14, was composed in 1899. It consists of six movements that were published separately. In the Finale, there are traces of the last movement of Widor's second symphony. The theme, played by pedals under a broken chord accompaniment, has a simple, almost rustic nature. The second section, beginning at measure 40, contains canonic writing. With the re-appearance of the first subject in the tenor in measure 104, the pedals show a slight reference to the first three notes of the canon and continue it through measure 161 with an almost humorous effect. This piece appeals to the performer and listener by its vigor and tunefulness (Grace, 1919, pp. 168-173).

Conclusions

Organs have gone through many changes since the German Baroque period. Finding a typical Baroque organ with authentic Baroque sounding stops is rare. In the nineteenth-century, Cavaillé-Coll made major changes to the organ. French Romantic pieces have many registration changes as compared to the German Baroque music. The French composers gave specific registration instructions for their music. The Baroque composers gave very few suggestions because they did not have the variety of stops and mechanisms to change registrations. They varied the music by changing manuals and chose their own registrations based on the instrument they were playing. Baroque music used reeds sparingly. The registrations of the nineteenth and twentieth century organ music begins with enclosed and unenclosed 8' stops in the manuals and 16' and 8' stops of the pedal coupled together. These are the basic stops for the full organ. Additional foundation stops of 16', 8' and 4' on all keyboards are then added, followed by reeds and mixtures. The swell shades are used to change volume and the crescendo pedals are used to add or subtract the stops. Composers of Baroque music did not use 16' on manuals and would not have coupled the reeds from one manual to another. Baroque music requires bright and full registrations while the French Romantic music requires warm rich thick timbres. Since organs vary in scaling, voicing, and stops, an organist uses recommendations from research to register Baroque music and choose registrations on the instrument they are playing based on the suggestions in the French Romantic music. While choosing registrations for the recital pieces, the writer had to make adjustments. Not all stops suggested in the French Romantic music were available on the Schantz performance organ (Appendices N and O). As the stop list was studied, the writer

noticed that the organ consultant, John Williams, put most of the German stops on the Great manual with French stops on the Swell. The Choir manual has a combination of German, French, and English stops. Some of the stop names are generic and even with specific German or French names, they have different qualities based on the voicing and scaling of the organ. An organist learns the stops on the particular instrument to be played. An organist does not find it easy to move from one instrument to another because of the differences in stop lists and qualities of sound. This document has established standards for registrations unique to German Baroque and French Romantic music. It will serve as a resource for professional organists seeking enriched and historically-grounded options for registrations.

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Appendix A

Definitions

Blockwerk: (Ger.) denotes the undivided chest of the medieval organ based on a double Principal without other stops separated off (Williams, 1988, p. 295).

Brustwerk: (Ger.: 'breast department'). A small organ-chest, usually with its own manual, encased compactly above the keyboards and below the *Hauptwerk*, in the breast of the organ (Williams, 1988, p. 296).

Chair Organ: The English name for the *organ behind the bench*, the same as the German *Rückpositiv* or French *Positif.* The term Choir Organ is found as early as 1699 and the similarity of the names has led to some confusion (Wills, 1984, p. 244). The keyboard and chest secondary to the Great organ are correctly called Chair organ if the chest has its own case, separate from the main organ and placed behind the organist's back or chair (Williams, 1988, p. 298).

Chest: A term for wind chest (Williams, 1988, p. 298).

Choir Organ: (1) (Fr. *Orgue de choeur*; Ger. *Chororgel*). A small supplementary liturgical organ located in the chancel of a church. (2) A common term for the Chair organ, especially when it is not located in the traditional position on the gallery rail (Williams, 1988, p. 299).

Chorus: The grouping of stops, often in families, as in the *Blockwerk* or the French *plein jeu* (both mainly Principal tone), or the reeds and *Cornets* ensemble of the *grands jeu* (Wills, 1984, p. 244).

Diapason: The name given to foundation stops (Williams, 1988, p. 302). Its present meaning is the open diapason (main Principal rank, usually 8') and Stopped

Dapason (Gedackt) (Williams, 1988, p. 272).

Flue: The windway in an organ pipe from the foothole to the mouth, where the air is directed on to the upper lip. *Flues* or *flue stops* are distinct from *reeds* or *reed stops* in which the sound is produced by means of a beating reed (Wills, 1984, p. 245).

Flue choruses or Flue-work: The *flue-stops* of an organ collectively (as distinct from *reed-work*), i.e. those in which sound is produced on the duct or flue principle whereby wind is directed through a narrow windway to strike against a lip or edge above. The term refers to the open or stopped *Diapasons* or *Principals*, the Flutes, the narrow-scaled, conical, compound and all varieties of metal or wooden stops other than those of the reed-work. American authors prefer the terms *labial* (flue) and *lingual* (reed) (Williams, 1988, pp. 305-306).

Flute: (Flauto, It.; Flûte, Fr.; Flöte, Ger.): Originally the generic term for organ pipes rather than the mixtures when the *Blockwerk* was divided into 'stops'; later a word applied throughout Europe either to stopped pipes of 8' or 4' (as in 18th-century England) or to color-stops with prefixes denoting shape *(Spitzflöte*, etc), sound (*Sifflöte*, etc.) or function (*Flûte majeur*, etc.) (Williams, 1988, pp. 274-275).

Grand Choeur (Fr.): The Great chorus of a French organ. While *grand jeu* and *plein jeu* denote the two kinds of major choruses on the Classical French organ (c1600-1800), *Grand Choeur* suggests rather the group of stops added to the foundations of the organ (16', 8,' and 4' ranks) to make full organ in music of the post-classical period. It is not a registration as such, nor is it normally used by composers. The term significantly appeared in the stop-lists of Cavaillé-Coll's formative organ at St.

Sulpice, Paris (completed 1862), to denote the thirteen reed and mixture stops played form the *Grand Orgue* manual but placed on a separate chest from the *Diapason* chorus ranks of the *Grand Orgue* proper (Williams, 1988, pp. 307-308).

Grand jeux: The reed chorus of the classical (seventeenth and eighteenth century) French organ (*Grand Orgue* plus *Positif*), reinforced by *Cornets*, *Tierces* and *Prestants* 4' (Wills, 1984, p. 246).

Grand Orgue: see Great Organ.

Great Organ: Term used in two related but different ways; (1) to denote a large organ as distinct from a smaller chamber organ, in church accounts and general literature; and (2) to denote the larger or main manual or a two-manual or double organ of the seventeenth-century, as distinct from the Chair organ. The contents of and function of the Great organ correspond to those of the *Grand Orgue*, *Organo Primo*, *Hauptwerk* (or *Oberwerk*), *Hoofdwerk* etc, except that the English main manual has not an unbroken tradition for massive Diapason choruses. Those of the 16th and 17th centuries were usually little more than the large-scale chamber organs, often in a place traditionally kept for small organs in the Netherlands, Italy, etc. Larger Great organs were built from around 1820, particularly under the influence of Dutch organs and German composer (especially J. S. Bach). Following Cavaille-Coll's example, some English builders gave their Great organ keyboards several chests including major reed departments often on high wind-pressure. But since the Organ Reform Movement of the 1920s, the Great organ has been recognized as essentially a Diapason chorus, not far removed form the *Blockwerk* in conception, and in larger

examples containing stops along with lines of 16.16.8.8.5 1/3.4.2 2/3.2.II.V-X.III.16.8 (Williams, 1988, p. 308).

Hauptwerk: see Great Organ.

Mixture stop: A stop composed of several ranks of pipes at various pitches, most often octaves and 5^{th}. The term is both generic, referring to compound stops in general, and specific, in that Mixture (*Mixtur, mixtuur, mixtura*) is also the name used in some areas and periods for the chief mixture of the *Diapason* chorus or *pleno (lleno, plein jeu, ripieno)* (Williams, 1988, p. 314).

Montres: The Principal rank of a French organ and may be of 32', 16', or 8' pitch. A *Prestant* is a *Montre* of 4' pitch (Wills, 1984, p. 246). The case pipes of the French organ, corresponding to the English Open *Diapason*, the German *Prestant* and the Italian *Principale* (Williams, 1988, p. 279).

Mutation stop: In modern organ usage, mutations are those single-rank stops, usually of wide or fairly wide-scaled pipes with a high lead content, pitched at the 5^{th}, 3^{rd}, 7^{th}, 9^{th} etc. of an upper octave; sometimes called *overtone stops*. Common examples are the *Nasard, Larigot* and *Tierce*; Sometimes the stop has two ranks (*Terazian*) in which case it really belongs to the mixtures. If the stop is scaled, voiced, and constructed of a metal suitable for a Principal rank (Twelfth); it is not a Flute mutation. The term does not refer to the changing of the fundamental tone to an overtone, as often stated in English sources, but to the varieties of tone or *mutaciones* such stops afford (Williams, 1988, p. 314).

Oberwerk: (Ger.: 'upper department'). The upper chest and manual of a German organ, often (since around 1840) provided with Swell shutters, able by its position to take

larger pipes than the *Brustwerk* and other minor chests of a *Werkprinzip* organ. In many sources, *Oberwerk* denotes *Hauptwerk*, the main chest above the player, as opposed to the Chair (Williams, 1988, p. 315).

Organo pleno: (It.: 'full organ'; Fr. *Plein jeu*; Ger. *Volles Wer*; It. *Ripieno*). A term for an organ registration using the major choruses of the instrument. It has rarely, if ever, denoted that the composer has required the organist to draw every stop. Since around 1850, most composers other than French ones have left it to the organist's discretion and the organ-bellow's capacity (Williams, 1988, p. 316).

Plein jeux: (Fr.: 'full registration') (Williams, 1988, p. 321). The French term for the full Principal chorus from 16' to *Cymbale* on *Grand orgue* and *Positif* (Wills, 1984, p. 246).

Plenum: (Lat.) The full sound of the organ or harpsichord (Randel, 1986, p. 642).

Positif: (Positive). A small organ that could be placed where needed in any part of a large church, or used domestically. Its eventual merging with the *Blockwerk* either internally or as a Chair Organ (*Rückpositiv*) was one of the most significant developments in the evolution of the organ, making available many possibilities of textural contrast, such as solo and accompaniment (Wills, 1984, p. 246).

Positiv: see *Positif.*

Principal: (Ger. *Prinzipal).* The term first arose soon after 1500 in the Netherlands to denote not a single rank of pipes but the *Diapason* chorus as a whole. In the 20th century, *Prinzipal* has become useful as a term denoting the relatively colorless German basic 8' rank as opposed to the various English *Diapason* tones (Williams, 1988, p. 281).

Récit: (Fr.) In the French classical organ, a short-compass division usually played from the top manual and containing solo stops) reeds, cornet mixture). In the 19th century, this division was expanded and enclosed to become the *récit expressif*, or Swell (Williams, 1988, p. 323).

Reed Pipe: (Fr. *Anche, tuyau à anche*; Ger. Zungenpfeife, Zungenstimme; It. *Ancia, canna ad ancia*). An organ pipe in which the sound is produced by a vibrating metal tongue modified by a resonator, as distinct from a flue pipe. Reed pipes (Reed-work) refer to the Trumpet family of flaring pipes, the *Krummhorn* family of cylindrical pipes, and others of short, fanciful, stopped and half-stopped pipes and varieties of metal and wooden stops other than those of the flue-work (Williams, 1988, pp. 323-324).

Registration: The art of choosing stops appropriate to the music being interpreted and therefore largely dependent on the performer's knowledge of historical styles of organ-building and composition. It is necessarily limited by the resources of any given instrument (Wills, 1984, p. 247).

Scaling: (Fr. *Diapason;* Ger. *Mensur*). The relationship between the diameter of a pipe and its length. Wide-scaled pipes produce a stronger fundamental; narrow-scaled pipes have a higher harmonic development, at the expense of fundamental. In the Renaissance and Baroque instruments, it is not unusual to find all of the principal ranks, regardless of pitch, to be of the same scale. This means that all notes of the same pitch will be of the same diameter. In the nineteenth-century many builders made their 8' principals to a larger scale than those of higher pitch. And many present-day builders also vary scales somewhat in their principal choruses. The size

of the building, and the size of the organ itself, are factors in the general scaling pattern (Williams, 1988, p. 326).

String: (Ger. *Streicher, streichende Stimme*). A species of narrow-scaled flue pipes voiced to produce an overtone series similar to that of a bowed string. One of the earliest string stops, the *Gamba,* appeared in the eighteenth-century. In the twentieth-century attempts at close imitation of actual instruments produced stops such as the *Viole d'orchestre*. String stops are often accompanied by a second rank, tuned slightly sharp (*Celeste*) to produce an undulating effect (Williams, 1988, p. 332).

Swell box: (Ger. *Schwellkasten*). An enclosure with movable shutters controlled form the console to vary the loudness of the pipework within. Usually the Swell organ is the only division so enclosed, but in the early twentieth-century it was not uncommon to find Choir organs, Solo organs, portions of the Great organ, and sometimes an entire organ so enclosed (Williams, 1988, p. 332).

Ventil: (Pallet) Any large valve which admits wind to a chest or stop. In nineteenth century French organs the reed stops sometimes had a separate pallet box and could be brought on with dramatic effect by use of a *ventil* pedal (Williams, 1988, p. 337).

Ventil Chest: (Ger. *Registerkanzellenlade*). A type of individual-valve chest developed in nineteenth-century Germany in which each stop had its own wind supply, which could be put in or shut off by the stop action (Williams, 1988, p. 337).

Werkprinzip: (Ger.: department principle). A term coined probably by the *Orgelbewegung* of the 1920s to describe the system for building organs in which each department or *Werk* (keyboard with its chest or chests) has its own separate structure. For convenience the keyboards (manual or pedal) are brought together at

one console, but the earliest examples of the Chair organ (Utrecht Cathedral, c1390) may also have had their keyboard separate, behind the organist (Chair organ and *Rückpositiv)*. Depending on requirements, an organ may be built of several *Werke*, each of which is structurally separate but which together are acoustically an entity (Williams, 1988, p. 339).

Wind-chest: The wind-chest is a long, broad but rather shallow wooden case, holding wind from the bellows under pressure. It receives the wind when the pallet is opened, and then distributes it to the pipes placed on the soundboard above. The chest is partitioned latitudinally into as many channels or grooves as there are notes in the keyboard compass (Williams, 1988, p. 340).

Appendix B

Stops – Pitches

(Goode, p. 17)

16'	sounds an octave below the note played	c*
8'	normal pitch of the note played	c
4'	sounds an octave above the note played	c
2 2/3'	sounds twelfth above the note played	g
2'	sounds fifteenth, two octaves above the note played	c
1 3/5'	sounds seventeenth above the note played	e
1 1/3'	sounds nineteenth above the note played	g
1'	sounds twenty-second, three octaves note played	c

Stops sounding notes other than unison or octaves are called mutations, for example, the twelfth, seventeenth, and nineteenth in the table above.

*note which is heard when one plays a c while using the stops indicated on the left in the table.

Appendix C
Ste. Sulpice
French Romantic

Paris, France
Rebuilt by Aristide Cavaillé-Coll, 1857-1862 (Sumner, 1962, p. 480)

Grand Choeur

Bombarde	16'
Basson	16'
Trompette I	8'
Trompette II	8'
Basson	8'
Octave	4'
Clairon	4'
Doublette	2'
Clairon-doublette	2'
Cornet	
Grosse fourniture	IV
Plein jeu	IV
Grosse cymbale	VI

Positif-Jeux de fond

Violonbasse	16'
Quintaton	16'
Quintaton	8'
Flute traversiere	8'
Gambe	8'
Salicional	8'
Unda maris	8'
Flute octaviante	4'
Flute douce	4'
Dulciana	4'
Quinte	2 2/3'
Doublette	2'

Positif-Jeux de combinaison

Basson	16'
Trompette	8'
Baryton	8'
Clairon	4'
Tierce	1 3/5'
Larigot	1 1/3'
Piccolo	1'
Plein jeu harm.	III-VI

Recit Expressif-Jeux de fond

Quintaton	16'
Diapason	8'
Bourdon	8'
Flute harmonique	8'
Violoncelle	8'
Voix celeste	8'
Basson hautboix	8'
Cromorne	8'
Voix humaine	8'
Prestant	4'
Flute octaviate	4'
Doublette	2'

Recit Expressif-Jeux de combinaison

Bombarde 16'
Trompette 8'
Clairon 4'
Dulciana 4'
Nazard 2 2/3'
Octavin 2'
Cornet V
Fourniture IV
Cymbale V
Trémolo

Grand Orgue

Principal harmonique 16'
Montre 16'
Bourdon 16'
Flute conique 16'
Montre 8'
Diapason 8'
Bourdon 8'
Flute harmonique 8'
Flute a pavillon 8'
Flute traversiere 9'
Salicional 8'
Grosse quinte 5 1/3'
Prestant 4'

Pedale-Jeux de fond
Principalbasse 32'
Contrebasse 16'
Soubasse 16'
Diapason (added 1934) 16'
Flute 8'
Violoncelle 8'
Octave (added 1934) 8'
Flute 4'

Pedale-Jeux de combinaison
Contre bombarde 32'
Bombarde 16'
Basson 16'
Trompette 8'
Ophicleide 8'
Clairon 4'

Solo (Bombardes)-Jeux de fond
Bourdon 16'
Flute conique 16'
Principal 8'
Bourdon 8'
Flute 8'
Violoncelle 8'
Keraulophone 8'
Viole di gamba 8'
Prestant 4'
Flute octaviante 4'

Solo (Bombardes)-Jeux de combinaison
Grosse quinte 5 1/3'
Octave 4'
Grosse tierce 33 1/5'
Quinte 2 2/3'
Septieme 2 2/7'
Octavin 2'
Cornet V
Bombarde 16'
Trompette harmonique 8'
Trompette 8'
Clairon 4'

Combination action stops
Couplers controlled by hitch-down pedals

Appendix D
Survey of the History of the Organ (Klotz, 1969, pp. 138-139)

SURVEY OF THE HISTORY OF THE ORGAN

Time	Bellows	Windchests	Action	Stops
1300	multiple fold bellows	box chests	mechanical	undivided Principalwerk, later called Blockwerk
		double chest		Principal and Hintersatz; Position; Location (Mixture)
1400		slider chest		Gedackt 8′, Octaves; Rauschquinte II, Quinte, Zimbel or Scharf, Sallcional 8′, Flöte 4′, Gemshorn 2′, Sifflöte 1′, Hornwerk/Nachthorn (multiple-rank Kornett), Klingend Zimbel III, Trompete 8′ (Pedal), Krummhorn 8′, Rankett, Zink 8′ (treble), Quintade 8′, Rohrflöte 8′ and 4′, Nasat 2⅔′, Bauerpfeife 1′ (Pedal), Subbass 16′, Nachthorn 2′ (Pedal), Quintflöte 1⅓′, Trompete 8′ (Manual), Quintade 16′, Offenbass 8′, Querflöte 8′ and 4′, Spillflöte, Posaune 16′, Dulzian 16′ and 8′, Kornett 2′ (Pedal), Gemshorn 8′, Viola da Gamba 8′, Tolkaan/Trichterflöte, Fiffaro or Schwebung 8′, Choralbass 4′, Quintade 4′ (Pedal), Trompete 4′, Terz 1⅗′, Posaune 32′, Trompete 16′, Trichterregal 8′, Bourdon 16′, Terzian II, Vox humana 8′, Septime, Carillon, Musette
		spring chest		
1500	*Spanbalg*			
1600				
1700	box bellows		Barker lever	
1800	reservoir and feeder bellows	conē-valve chests; membrane chests	tubular-pneumatic action	
		pouch chests		various less important stops
1900	electric blower with Schwimmers in the pallet box	tone-channel chests of modern construction	electro-pneumatic action; modern tracker constructions	new partials in independent and compound stops (Ninth, Eleventh, Thirteenth, minor Second, minor Third)

Accessories	Schwellwerk	Manual Compass	Pedal Compass	Divisions	Time
		c–d′		Manual	1300
		B–a′	B–b-flat	Pedal	
manual coupler		B–f″			1400
				Rück-positiv	
Zimbelstern		FGA–g″ a″, (sometimes also FFGGAA–g″ a″)	FGA–b-flat	Brustwerk	1500
				Oberwerk	
tremulant	Regal-schwellwerk				
pedal coupler		CDEFGA–c‴ (short octave)	CDEFGA–d′ (short octave)	Récit	1600
				Echo	
	reed and mixture Schwellwerk (Spain)	CDE–c‴ or CD–c‴ (broken octave)	CDE–d′ or CD–d′ (broken octave)	*en chamade* reeds (Spain) Bombardes or solo (France)	1700
coupler pedals, wind trunk ventil pedals (French pistons)	string Schwellwerk (Germany)	C–f‴	C–d′		1800
Vorbereitungsknöpfe (German combinations) setter pistons (American combinations)	fully equipped Swell divisions (France, England, Germany)	C–a‴	C–f′		1900
		C–c⁗	C–g′		

N. B. The old organs were usually tuned a half tone higher *(Chorton)* in Germany than the present-day instruments *(Kammerton;* formerly the *Kammerton* was a half tone lower than the present-day *Kammerton).* On these organs c d e approximated today's c-sharp d-sharp f or d e f-sharp. The problem of pitch in these organs appears further complicated by the circumstance that many instruments sounded the pitch f on the key c, hence the pitches g, a, b-flat, c etc., on the keys d, e, f, g, etc. On such organs, f rather then c would correspond to the present-day pitches c-sharp or d respectively (Schlick tuning).

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Appendix E

Sainte Jacobikirche Organ
German Baroque

Hamburg, Germany
Built by Arp Schnitger in 1688-93
Bach applied for the post, but the position went to J. J. Heitman who was able to give money to the church in order to get the position (Sumner, 1961, p. 12).
The Organ was restored in 1950.
Stop List (Sumner, 1962, p. 393)

Hauptwerk

Prinzipal	16'
Quintatiön	16'
Oktave	8'
Spitzflöte	8'
Gedackt	8'
Oktave	4'
Rohrflöte	4'
Superoktave	2'
Flachflöte	2'
Rauschpfeife	3 ranks
Mixtur	6-8 ranks
Trompete	16'

Oberwerk

Prinzipal	8'
Holzflöte	8'
Rohrflöte	8'
Oktave	4'
Spitzflöte	4'
Nasat	3 (22/3)'
Oktave	2'
Gemshorn	2'
Scharff	4-6 ranks
Zimbel	3 ranks
Trompete	8'
Vox humana	8'
Trompete	4'

Rückpositiv

Prinzipal	8'
Gedackt	8'
Quintatiön	8'
Oktave	4'
Blockflöte	4'
Nasat	3 (2 2/3)'
Oktave	2'
Sifflöte	1½ (1 1/3)'
Sesquialter	2 ranks
Scharff	4-6 ranks
Dulzian	16'
Bärpfeife	8'
Schalmei	4'

Brustwerk

Holzprinzipal	8'
Oktave	4'
Hohlflöte	4'
Waldflöte	2'
Sesquialter	2 ranks
Scharff	4-6 ranks
Dulzian	8'
Trechterregal	8'

Pedal

Prinzipal	2'
Oktave	16'
Sub-bass	16'
Oktave	8'
Oktave	4'
Nachthorn	2'
Mixtur	6-8 ranks
Rauschpfeife	3 ranks
Posaune	32'
Posaune	16'
Dulzian	16'
Trompete	8'
Trompete	4'
Kornett	2'

Coupler

Oberwerk to hauptwerk
Brustwerk to oberwerk

Oberwerk tremulant

Appendix F

Ste. Boniface
German Baroque

Arnstadt, Germany
Built by Johann Friedrich Wender, 1701
Bach's Tenure was 1703-1707
The organ lasted until 1862, but a few stops and most of the case were incorporated in the present organ. The console is in the Museum of Bach relics in Arnstadt (Sumner, 1962, p. 396) .

Oberwerk

Quintatön	16'
Principal	8'
Viola da Gamba	8'
Gedackt	8'
Gemshorn	8'
Quinte	6' (5 1/3')
Octava	4'
Mixture	IV
Gemshorn	8'
Cymbel	II
Trompete	8'
Cymbelstern	
Tremulant	

Pedal

Sub-bass	16'
Prinzipalbass	8'
Flötenbass	4'
Posaune	16'
Cornet bass	2'

Brustpositiv

Gedackt	8'
Principal	4'
Sptizflöte	4'
Nachthorn	4'
Quint	3'(2 2/3)
Sesquialtera	II
Mixtur	II
Octave	2'
Manual and Pedal Koppel	

Appendix G

Ste. Blasius Organ
German Baroque

Mühlhausen, Germany
Bach's tenure was 1707-1708
(Williams, 1968, p. 145-146)

Hauptwerk

Quintadena	16'
Prinzipal	8'
Viola da Gamba	8'
Okave	4'
Gedackt	4'
Quinte	2 2/3'
(Nasat?)	
Oktave	2'
Sesquialtera	II
Mixtur	IV
Zimbel	II
Fagott	16'

Brustwerk

Gedact	8'
Flöte	4'
Prinzipal	2'
Tierce	1 3/5'
Quinte	1 1/3'
Mixtur	III
Schalmei	8'

Rückpositiv

Gedackt	8'
Quintaton	8'
Prinzipal	4'
Salizional	4'
Oktave	2'
Spitzflöte	2'
Quintflöte	(1 1/3'?)
Sesquialtera	II
Zimbel	III

Pedal

Untersatz	32'
Prinzipal	16'
Subbass	16'
Oktave	8'
Oktave	4'
Rohrflöte	I
Mixtur	IV
Posaune	16'
Tompete	8'
Cornett	2'

Rp stop-knobs behind the player
Hw/Bw Hw/Rp P/Hw
Tremulant to all 3 manuals (at once)
Zimbelstern
Pauke
Kalkantenglocke

Appendix H

Schlosskirche (Castle Organ)
German Baroque

Weimar, Germany
Bach's Tenure was 1708-1717
(Sumner, 1961, p. 14)
Built by Ludwig Compenius in 1657.
Later rebuilt by Weishaupt and Trebs in 1719-1720).

Hauptwerk (upper keyboard)

Quintation	16'
Prinzipal	8'
Gemshorn	8'
Gedackt	8'
Octave	4'
Quintation	4'
Mixtur	VI ranks
Cymbel	III ranks
Glockenspiel	

Positiv (lower keyboard)

Prinzipal	8'
Viola di gamba	8'
Gedackt	8'
Kleingedackt	4'
Octave	4'
Waldflote	2'
Sesquialtera	II ranks
Trompeta	8'

Pedal

Gros untersatz	32'
Sub-bass	16'
Violon bass	16'
Prinzipal bass	8'
Posaune bass	16'
Trompeten	8'
Cornetten bass	4'

Tremulant to Hauptwerk
Tremulant to Unterwerk (Positiv)
Pedalkoppel zum Hauptwerk
Coppelung der Manual Claviere
Cymbel Stern

Appendix I

Thomaskirche Organ
German Baroque

Leipzig, Germany
Built in 1525
Rebuilt by Johann Scheibe in 1723 (Goode, p. 113)
Bach's tenure included the years 1722-1750.
Stop List of large organ (Sumner, 1962, p. 397).

Oberwerk

Principal	16'
Principal	8'
Quintadena	16'
Octava	4'
Quinta	3'
Super octava	2'
Spiel-Pfeiffe	8'
Sesquialtera	2 ranks
Mixtur	6, 7-10 ranks
Tremulant	
Vogelgesang (bird song)	
Cimbelstern	

Brustwerk

Grossgedackt	8'
Principal	4'
Nachthorn	4'
Nasat	3'
Gemshorn	2'
Cimbel	2 ranks
Sesquialtera	
Regal	8'
Geigendregal	4'

Rückpositiv

Principal	8'
Quintadena	8'
Lieblich gedackt	8'
Klein gedackt	4'
Traversa	4'
Violin	2'
Rauschquinte	2 ranks
Mixtur	4 ranks
Spitzflöte	4'
Schallflöte	1'
Krumbhorn	16'
Trommet	8'

Pedal

Sub-bass von metall	16'
Posaunenbass	16'
Trommetenbass	8'
Schallmeyenbass	4'
Cornett	3'

Appendix J

Sainte Wenzelskirche
German Baroque

Naumburg, Germany
Built by Z. Hildebrant Organ (1743-46)
(Williams, 1968, p. 157-158)

Hauptwerk II

Prinzipal	16'
Quintadena	16'
Oktave	8'
Spillflöte	8'
Gedackt	8'
Oktave	4'
Spillflöte	4'
Quinte	2 2/3'
Oktave	2'
Weitfeife	2'
Sesquialtera	II
Mixtur	8'
Cornet	IV
Bombarde	16'
Trompete	8'

Rückpositiv I

Prinzipal	8'
Viola da gamba	8'
Rohrflöte	8'
Quintation	8'
Prinzipal	4'
Fugara	4'
Rohrflöte	4'
Nasat	2 2/3
Oktave	2'
Rauschpfeife	II
Zimbel	V
Fagott	16'

P/Hw
2 Tremulants (Ow, Rp)
4 Sperrventile (to save the wind)
Zimbelstern
W/P

Oberwerk III

Bourdon	16'
Prinzipal	8'
Hohlflöte	8'
Unda Maris	8'
Prinzipal	4'
Gemshorn	4'
Quinte	3'
Oktave	2'
Waldflöte	2'
Tierce	1 3/5'
Quinte	1 1/3'
Sifflöte	1'
Scharf	V
Vox humana	8'

Pedal

Princzipal	16'
Subbass	16'
Violon	16'
Oktave	8'
Violon	8'
Oktave	4'
Nachthorn	2'
Mixtur	VII
Posaune	32'
Posaune	16'
Trompete	8'
Clarin	4'

Appendix K

Fraureuth Organ
German Organ

Fraureuth, Germany
Built between 1730 and 1742 by Gottfired Silbermann
Exhibits the typical Silbermann blend of central German and French elements. (Wills, p. 65)

Hauptwerk	
Prinzipal	8
Rohrflöte	8
Quintadena	8
Oktave	4
Spitzflöte	4
Quinte	2 2/3
Superoktave	2
Tierce	1 3/5
Mixtur	IV
Cornet	III

Oberwerk	
Gedact	8
Rohrflöte	4
Nasat	2 2/3
Oktave	2
Quinte	1 1/3
Sifflöte	1
Sesquialtera	1 3/5
Zimbel	II

Couplers
Hauptwerk to Oberwerk
Hauptwerk to Pedal

Pedal	
Subbass	16
Posaune	16

Tremulant

Appendix L

Ste. Clotilde Organ
French Romantic

Built by Aristide Cavaillé-Coll, 1859
Ste Clotilde, Paris (Wills, p. 102)
Franck's tenure 1859-1890

Grand Orgue (Great)	
Montre	16
Bourdon	16
Montre	8
Flûte harmonique	8
Bourdon	8
Gambe	8
Prestant	4
Octave	4
Quinte	2 2/3
Doublette	2
Plein Jeu	
Bombarde	16
Trompette	8
Clairon	4

Postitif (Choir)	
Bourdon	16
Montre	8
Flûte harmonique	8
Bourdon	8
Gambe	8
Salicional	8
Prestant	4
Flûte octaviante	4
Quinte	2 2/3
Doublette	2
Trompette	8
Clarion	4
Clarinette	8

Récit (Swell)	
Viole de gambe	8
Flûte harmonique	8
Bourdon	8
Voix célestes	8
Flûte octaviante	4
Octavin	2
Trompette	8
Basson-Hautboy	8
Voix humaine	8
Clairon	4

Pédale	
Quintation	32
Contre basse	16
Flûte	8
Octave	4
Bombarde	16
Basson	16
Trompette	8
Clairon	4

Appendix M

Ste. Denis Abbey
(now Ste. Denis Cathedral)
French Romantic

Paris, France
Built by Aristide Cavaillé-Coll, 1841
All Manuals, C-f3, 54 notes (Williams 1996, p. 201)

Grand Orgue II	
Montre	32
Montre	16
Bourdon	16
Montre	8
Bourdon	8
Viole	8
Flûte traverse	8
Prestant	4
Flûte traverse	4
Nasard	2⅔
Doublette	2
Grande Flourniture	IV
Petite Fourniture	IV
Grande Cymbale	IV
Petite Cymbale	IV
Cornet (mounted)	V
Trompette	8
Trompette	8
Basson	8 (bass)
Cor anglais	8 (treble)
Clairon	4

Positif I	
Bourdon	16
Bourdon	8
Salicional 8	
Flûte (open)	8
Prestant	4
Flûte	4
Nasard	2⅔
Doublette 2	
Flageolet	2
Tierce	1 3/5
FournitureIV	
Cymbale IV	
Trompette 8	
Cor d'Harmonie	8(bass)
Hautboy	8(treble)
Cromorne	8
Clairon	4
Tremblant	

Pedal	
Flues C-f, 18 notes	
Reeds, FF-f, 25 notes	
Flûte ouverte	32
Flûte	16
Flûte	8
Nasard	5⅓
Flûte	4
Basse-contre(open)	16(24)
Bombarde	16(24)
Basson	8(12)
Trompette	8(12)
Trompette	8(12)
Clarion	4(6)
Clarion	4(6)

Récit IV	
Bourdon	8
Flûte	8
Flûte	4
Quinte	2⅔
Octavin	2
Trompette	8
Voix humaine	8
Clairon	

Bombarde III	
Clairon	4
Clairon	4

Appendix N

Laurinburg Presbyterian Church

Schantz Pipe Organ, 37 ranks
Jones Memorial Organ
Built by Schantz Organ Company in 1972
Console digitalized in February 2005
Origins of organ stops researched from Williams, 1998, pp. 265-292, and Audsley, 1949, pp. 33-290.

Great Organ (Unenclosed – pipes exposed on each side of the chancel)

Principal (Ger.)	8'	61 pipes
Gedackt (Ger.)	8'	61 pipes
Octave	4'	61 pipes
Nachthorn (Ger.)	4'	61 pipes
Super Octave	2'	61 pipes
Mixture	IV ranks	244 pipes
Trompete (Ger.)	8'	61 pipes
Chimes		

Features include Great 16', Great 4', and Unison Off

Swell Organ (Enclosed in expression chamber on the right side of the chancel)

Flûte à Cheminée (Fr.)	16'	12 pipes (Flûte à Cheminée 8')
Flûte à Cheminée (Fr.)	8'	61 pipes
Viole de Gambe (Fr.)	8'	61 pipes
Viole Céleste (Fr.)	8' t.c.	49 pipes
Prestant (Fr.)	4'	61 pipes
Flûte à Cheminée (Fr.)	4'	12 pipes (Flûte à Cheminée 8')
Doublette (Fr.)	2'	61 pipes
Plein Jeu (Fr.)	III ranks	183 pipes
Trompette (Fr.)	8'	61 pipes
Hautbois (Fr.)	4'	61 pipes
Tremulant		

Features include Swell 4', Swell 16', and Unison off

Choir Organ (Enclosed in expression chamber on the left side of the chancel)

Bordun (Ger.)	8'	61 pipes
Flauto Dolce (It.)	8'	61 pipes
Flauto Céleste (It.)	8' t.c.	49 pipes
Koppel Flöte (Ger.)	4'	61 pipes
Nasat (Ger.)	2 2/3'	61 pipes
Block Flöte (Ger.)	2'	61 pipes
Principal (Ger.)	2'	61 pipes
Terz (Ger.)	1 3/5'	61 pipes
Scharf (Ger.)	III ranks	183 pipes
Dulzian (Ger.)	8'	61 pipes
Trompete (Gt) (Ger.)	8'	61 notes (Trompete)
Cymbelstern (Ger.)		5 bells
Tremulant		
Unison off		
Choir 16'		
Choir 4'		

Pedal Organ (Unenclosed in chamber on the left side of the chancel)

Resultant	32'	32 notes (Brummbass)
Principal (Ger.)	16'	32 pipes
Brummbass (Ger.)	16'	32 pipes
Flûte à Cheminée (Sw) (Fr.)	16'	32 pipes
Octave	8'	12 pipes (Principal)
Flûte à Cheminée (Sw)(Fr.)	8'	32 pipes
Super Octave	4'	12 pipes (Octave)
Flûte à Cheminée (Sw)	4'	32 pipes
Mixture	III ranks	96 pipes
Posaune (Ger.)	16'	32 pipes
Trompete (Ger.)	8'	12 pipes (Posaune)
Dulzian (Ch) (Ger.)	4'	32 notes

Tilting tablets (intermanual couplers)

Great to Pedal 8'	Swell to Great 16'	Swell to Choir 16'
Great to Pedal 4'	Swell to Great 8'	Swell to Choir 8'
Swell to Pedal 8'	Swell to Great 4'	Swell to Choir 4'
Swell to Pedal 4'	Choir to Great 16'	Great to Choir 8'
Choir to Pedal 8'	Choir to Great 8'	
Choir to Pedal 4'	Choir to Great 4'	

Pistons (99 Levels of Memory)
8 General pistons (also toe stud)
5 Swell pistons
5 Great pistons
5 Choir pistons
5 Pedal pistons (toe stud)

Located under Choir Manual
Setter
General Cancel
Next button – to give next registration in sequence

Located under Great Manual
Full Organ I & II (I is set by factory, II can be manually set)

Reversibles (thumb)
Swell to Pedal
Great to Pedal
Choir to Pedal

Reversibles (toe)
Cymbelstern
Choir to Pedal
Great to Pedal
Swell to Pedal
Full Organ I & II

Expression Pedals
Choir Swell
Crescendo

Located under Great and Choir draw-knobs
Chimes off 1-5

Appendix O

Registrations of Performance Literature

***Praeludium in A Minor,* BWV 569 by Johann Sebastian Bach (1685-1750)**

Registration suggestions from music: S. Bornemann, Editor; Dupré Edition
Foundations 8', 4', Mutations

Registration on Schantz Organ:

Swell: Flûte a Cheminée 8' (Fr.), Flûte a Cheminée 4' (Fr.), Prestant 4' (Ger.), Doublette 2' (Fr.), Plein Jeu III (Fr.)
Great: Gedackt 8' (Ger.), Principal 8' (Ger.), Octave 4', Super octave 2', and Mixture IV
Choir: Bordun (Ger.), Koppel Flöte 4' (Ger.), Principal 2' (Ger.)
Pedal: Principal 16' (Ger.), Posane 16' (Ger.), Brummbass 16' (Ger.), Octave 8', Super Octave 4', Mixture III, Scharf (Ger.)
Coupler: Swell to Pedal 8'

***Wachet auf, ruft uns die Stimme,* BWV 645, by Johann Sebastian Bach (1685-1750)**

Registration suggestions from music: Editor, Albert Riemenschneider; Oliver Ditson Edition
Dextra 8 Fuss (Right 8 Foot), Sinistra 8 Fuss (Left 8 Foot), Pedal 16 Fuss (Pedal 16 Foot)

In the editor's comments for registration, he suggests using a balanced combination of 8' and 4' mutation stops or a string combination of 8' and 4' stops for the upper part. For the melody, he writes that an 8' combination is needed, preferably containing a reed. The pedal should represent the violincello 8' and violone 16' or couple the pedal to the softer manual and add a 16' stop.

Registration on the Schantz Organ:

Pedal: Brummbass 16' (Ger.), Octave 8', Flûte à Cheminée 4' (Fr.)
Swell: Trompette 8'(Ger.)
Great: Gedackt 8' (Ger.), Nachthorn 4' (Ger.), Super Octave 2'
Choir: Bordun 8' (Ger.), Flauto Dolce 8', Koppel Flöte 4'(Ger.), Block Flöte 2' (Ger)

***Toccata* by Eugène Gigout (1844-1925)**

Registration suggestions from music: Alphonse Leduc, Editor; Editions Musicales, 175, rue; Saint-Honoré, Paris

Measure 1:

Au Grand et au Positif, les Fonds de 8 et 4 P. (puis les Anches de 8 et 4 P.)
On Great and Choir, Foundations 8' and 4' (then Reeds 8' and 4')
Au Récit, les Founds et les Anches de 8 et 4 P.
On Swell, Fondations and Reeds 8' and 4'
A la Pedale, les Fonds de 16, 8, 4 P. (puis les Anches de 16, 8, 4 P.)
Pedal, Foundations 16', 8', 4' (then Reeds 16', 8' 4')

Registration on the Schantz Organ:

Swell: Flûte à Cheminée 16'(Fr.), Flûte à Cheminée 8'(Fr.), Viole de Gambe 8'(Fr.) , Viole Céleste (Fr.), Flûte à Cheminée 4' (Fr.), Prestant 4' (Fr.),Trompette 8'(Ger.)
Great: Principal 8' (Ger.), Gedackt 8' (Ger.), Octave 4', Nachthorn 4'(Ger.)
Choir: Bordun 8' (Ger.), Flauto Dolce 8' (It.), Koppel Flöte 4' (Ger.)
Pedal: Principal 16' (Ger.), Flûte à Cheminée 16' (Fr.), Brummbass 16'(Ger.), Flûte à Cheminée 8' (Fr.), Octave 8', Flûte à Cheminée 4'(Fr.), Super Octave 4'
Couplers: Swell to Great 8', Choir to Great 8', Swell to Choir 8'

Measure 69:

Manuals: Ajoutez les Anches du Positif. (Add the Choir Reeds)

Registration on the Schantz Organ:

No changes because the choir reed is the same rank as the Great reed.

Measure 73:

Ajoutez les Fonds du Gd Orgue. (Add the Great Foundation stops)
Pedal: Ajoutez les Anches. (Add the Reeds)

Registrations on the Schantz Organ:

Great: Add Trompete 8' (Ger.)
Couplers: Add Great to Pedal 8', Swell to Pedal 8'

Measure 134:

Manual: Ajoutez les Anches du Gd Orgue. (Add the Great Reeds)
Pedal: Tirasse. (Add Couplers)

Registrations on the Schantz Organ:

Swell: Flûte a Cheminée 16', Flûte a Cheminée 8', Flûte a Cheminée 4', Viole de Gambe 8', Prestant 4', Tompette 8'

Great: Principal 8', Gedackt 8', Octave 4', Super Octave 2', Mixture IV, Trompette 8'
Choir: Bordun 8', Flauto Dolce 8', Koppel Flöte 4'
Pedal: Resultant 32', Principal 16', Brummbass 16', Octave 8', Super Octave 4', Mixture III, Posaune 16', Tompete 8'
Couplers: Swell to Great 8', Swell to Great 4', Choir to Great 8', Swell to Choir 8', Great to Pedal 8', Swell to Pedal 8', Swell to Pedal 4', Choir to Pedal 8'

Measure 182:
Manual: Ajoutez les 16 p. (Add the Reed 16')

Registration on Schantz Organ:
Full Organ

***Prélude, fugue, et variation, Opus 18,* by César Franck (1822-1890)**

Registration suggestions from music: Dover Publications, Inc.

Prelude (Andantino):

Récit – Bourdon de 8 pieds, Flûte de 8 pieds, Hautbois de 8 pieds.
(Bourdon 8', Flute 8', Hautbois 8')
Positif – Flûte de 8 pieds (Flute 8')
Grand Orgue – Bourdon de 8 pieds (Bourdon 8')
Pedale – Flûtes de 8 et 16 pieds (Flute 8', 16')
Claviers séparés (No couplers)

Registration on Schantz Organ:
Swell – Flûte à Cheminée 4' (Fr.), Hautbois 4' (Fr.), Unison Off, Swell 16', Tremulant
Choir – Flauto Céleste 8', Flauto Dolce 8' (It.), Bourdun 8'
Great – Gedackt 8' (Ger.)
Pedal – Flûte à Cheminée 16', Flûte à Cheminée 8'

Measure 39:

Pedale – Ajoutez un jeu de 8 ou de 4 pieds à la pédale.
(Add 8' and 4' to the pedal)

Registration on Schantz Organ:
Pedal – Add Flûte a Cheminée 4', Octave 8'

Measure 43:

Pedale – Otez le jeu de 8 ou de 4 pieds.
(minus the 8' and 4')

Registration on Schantz Organ:
Pedal: Minus Flûte a Cheminée 4' and Octave 8'

Interlude (Lent):

Récit – Fonds de 8 et 4 pieds. Anches de 8 et 4 pieds
Positif – Fonds de 8 et 16 pieds. Prestant
Grand Orgue – Fonds de 8 et 16 pieds, Prestant
Pedale – Fonds de 8 et 16 pieds.
Claviers accouplés. Tirasses.

Registration on Schantz Organ:
Swell – Flûte a Cheminée 8', Viole de Gamba 8' (Fr.), Flûte a Cheminée 4', Prestant 4' (Fr.), Trompette 8' (Ger.)
Great – Gedackt 8' (Ger.), Principal 8' (Ger.), Nachthorn 4' (Ger.), Octave 4'

Choir – Flauto Celeste 8' (It.), Bordun 8' (Ger.), Flauto Dolce 8' (It.), Koppel Flöte 4' (Ger.), Trompette 8'
Pedal – Principal 16' (Ger.), Brummbass 16' (Ger.), Octave 8', Posaune 16' (Ger.)
Couplers – Great to Pedal 8', Choir to Pedal 8', Swell to Great 8', Choir to Great 8', Swell to Choir 8', Swell to Choir 4'.

Fugue (Allegretto ma non troppo):
Récit – Fonds et Hautbois de 8 pieds.
Positif – Fonds de 8 pieds.
Grand Orgue – Fonds de 8 pieds.
Pedale – Fonds de 8 et 16 pieds. Claviers accouplés. Tirasses.

Registration on Schantz Organ:
Swell – Flûte a Cheminée 4', Hautbois 4', Swell 16', Unison Off
Great – Gedackt 8', Principal 8'
Choir – Flauto Celeste 8', Flauto Dolce 8', Bordun 8', Trumpet 8'
Pedal – Flûte a Cheminée 16', 8', Octave 8'
Couplers – Great to Pedal 8', Swell to Pedal 8', Choir to Pedal 8', Swell to Great 16', Choir to Great 8'

Measure 77:
Ajoutex les Fonds de 16 pieds et les Anches R.
(Add foundations 16' and the Reeds from Swell)

Registration on Schantz Organ:
Swell – Add Flûte Cheminée 8', Viole de Gamba 8'
Great – Add Trompette 8'
Choir – Minus Trumpet 8'
Pedal – Add Principal 16'

Variation (Andantino):
Récit – Bourdon de 8 pieds, Flûte de 8 pieds, Hautbois de 8 pieds.
Positif – Flûte de 8 pieds.
Grand Orgue – Bourdon de 8 pieds.
Pedale – Flûtes de 8 et 16 pieds.
Claviers séparés.

Registration on Schantz Organ:
Swell – Flûte a Cheminée 4', Hautbois 4', Unison Off, Swell 16', Tremulant
Choir – Flauto Celeste 8', Flauto Dolce 8', Bourdon 8'
Great – Gedackt 8'
Pedal – Flûte a Cheminée 16', Flûte a Cheminée 8'

Measure 37:

Pedale – Ajoutez un jeu de 8 ou de 4 pieds à la pédale.

Registration on Schantz Organ:

Pedal – Add Flûte a Cheminée 4', Octave 8'

Measure 41:

Pedale – Otez le jeu de 8 ou de 4 pieds.

Registration on Schantz Organ:

Pedal – Minus Flûte a Cheminée 4', Octave 8'

***Le Banquet céleste* by Olivier Messiaen (1908-1992)**

Registration suggestions from music: Alphonse Leduc, Editeur
Compared to Schantz Organ Registrations

Measure 1:
Récit – voix céleste, gambe, bourdon 8
Positif – flûte 4, nazard 2 2/3, doublette 2, piccolo 1
Grand – R G / Ped: tir. Pos. seule

Registration on Schantz Organ - Piston 1:
Swell - Flûte a Cheminée 8', Viole de Gambe 8', Viole Celeste 8
Choir – Koppel Flöte 4', Block Flöte 2', Nazat 2 2/3, Principal 2'
Couplers – Choir to Pedal 8', Swell to Great 8'

Measure 12:
Récit – + bourdon 16

Registration on Schantz Organ - Piston 6:
Swell – add Flûte a Cheminée 16'

Measure 15:
Récit – + flûte 8

Registration on Schantz Organ - Piston 7:
Great – add Gedackt 8'

Measure 18:
Récit – - flûte 8

Registration on Schantz Organ - Piston 6:
Great – minus Gedackt 8'

Measure 19:
Récit – - bourdon 16

Registration on Schantz Organ - Piston 1:
Swell - minus Flûte a Cheminée 16'

Measure 21:
Positif – - doublette 2

Registration on Schantz Organ - Piston 8:
Choir – minus Principal 2'

Measure 22:

Positif – - flûte 4

Registration on Schantz Organ - Piston 5:
Choir – minus Koppel Flöte 4'

Measure 23:

Positif – - piccolo 1, + doublette 2

Registration on Schantz Organ:
No change. There is not a piccolo 1' on the Schantz organ.

Measure 24:

Pedale – - tir. Pos., + bourdon 8', soubasse 16 et bourdon 32

Registration on Schantz Organ - Piston 4:
Pedal – add Flûte a Cheminée 8', Flûte a Cheminée 16', Resultant 32'

***Finale from Symphony* No. 1, Opus 14 by Louis Vierne (1870-1937)**

Registration suggestions from music: Kalmus Edition

Measure 1:

G.P.R. Fonds et Anches 16', 8', 4' (Foundations and Reeds 16', 8', 4')
Ped. Fonds 32', 16', 8', 4'; Anches 16', 8', 4' (Foundations 32', 16', 8', 4'; Reeds 16', 8', 4')

Registration on Schantz Organ – Piston 1:
Swell: Flûte a Cheminée 16', 8', Viole de Gambe 8', Prestant 4', Plein Jeu III, Trompette 8'
Great: Principal 8', Gedackt 8', Octave 4', Super Octave 2', Trompete 8', Great 16'
Choir: Bordun 8, Flauto Dolce 8', Koppel Flöte 4', Principal 2', Scharf III, Trompete 8'
Pedal – Resultant 32', Principal 16', Brummbass 16', Octave 8', Super Octave 4', Mixture III, Posaune 16', Trompette 8'
Couplers: Great to Pedal 8', Swell to Pedal 8',4', Choir to Pedal 8', Swell to Great 8', 4', Choir to Great 8', Swell to Choir 8', 4'

Measure 40:

P.R. and couple G. P. to Recit

Registration on Schantz Organ – Piston 8:
Swell: Add Flûte a Cheminée 4', Minus Plein Jeu III
Great: Minus Super Octave 2', Trompete 8', Great 16'
Choir: Minus Principal 2', Scharf III, Trompete 8'
Pedal: Minus Mixture III, Posaune 16', Trompette 8'
Couplers: Great to Pedal 8', Swell to Pedal 8', Choir to Pedal 8', Swell to Great 4', Swell to Choir 8'

Measure 68:

G.P.R. on Pedal

Registration on Schantz Organ – Piston 5:
Add Great to Pedal 8'

Measure 81:

R. for both hands
Pedal P. R.

Registration on Schantz Organ – Piston 7:
Swell: Minus Viole de Gambe 8', Prestant 4'
Couplers: Minus Great to Pedal 8', Add Great to Choir 8'

Measure 166:

Swell Reeds fff
P. Anches
G. Anches
Pedal Anches 32, 16, 8, 4; G. P. R.

Registration on Schantz Organ – Piston 1:
Swell: Add Viole de Gambe 8', Prestant 4', Plein Jeu III, Minus Flûte a Cheminée 4'
Great: Add Super Octave 2', Trompete 8', Great 16'
Choir: Add Principal 2', Scharf III, Trompete 8'
Pedal: Add Mixture III, Posaune 16', Trompette 8'
Couplers: Add Great to Pedal 8', Swell to Pedal 4', Choir to Pedal 8', Swell to Great 4', Swell to Choir 4', Minus Great to Choir 8'

Measure 243:

Full Organ

Appendix P

Lecture for Recital

[Enter and perform *Praeludium in A* Minor, BWV 569 by Johann Sebastian Bach (1685-1750)]

PP1 The topic for this recital is Comparing German Baroque and French Romantic Organ registrations.

PP2 The organ being played has three manuals with 37 ranks of pipes. Changes made to the console and organ in 2005 added solid-state multiplex coupler system, combination action with 99 levels of memory, relay system, and all electric action which removed the air in the console from the mechanical pneumatic action. In other words, it now has computerized controls. By use of the MIDI feature, I recorded several examples for tonight's demonstration.

Organ

PP3 "The organ and the clock are the most complex of all mechanical instruments developed before the Industrial Revolution" (Williams, Owens, 1988, p. 1). The history of the organ is the most involved of all instruments. It belongs to the wind family and has the largest and oldest existing repertoire.

PP4 There are three main parts of an organ: the bellows to push air into the pipes,

PP5 the chest with pipes,

PP6 and the console that admits air to the pipes.

PP7 Before electricity, organists were limited to practice time because they relied on man-power for air to make the pipes produce sound.

PP8 There are several different shapes of flue pipes. The sound is produced when air is directed through a narrow airway that strikes against a lip or edge above. Flue pipes are all varieties of metal or wooden pipes other than the reeds.
[Play a foundation registration: Disk song #1 (ML64 #1)]

PP9 There are also several different shapes of reed pipes. The strong and nasal sound is produced by a vibrating metal tongue modified by a resonator.
[Play a reed registration: Disk song #2 (ML64 #2)]

Registration

PP10 Registration is the process of selecting different tone colors and pitch levels on an instrument. These are selected by means of separate stops or registers. Each stop will have a number underneath the name. The number may be 16, 8, 4, 2, 1 or

even 2 2/3. The 8 foot stop is the normal pitch. The note will sound as it is written. When playing middle C, the sound will be Middle C.

[Sean – play middle C on the Swell manual (upper keyboard) with Flute a Cheminee 8' drawn]. A 16 foot stop will sound an octave lower than written. Sean will play the same note but you will hear an octave lower pitch.

[Sean – play middle C on the Swell manual with Flute a Cheminee 16' drawn.] A 4 foot stop will sound an octave higher than written.

[Sean – play a middle C on the Swell manual with Flute a Cheminee 4' drawn.] A 2 foot stop sounds 2 octaves higher, and the 2 2/3 sounds a twelfth above the note played.

[Sean – on the Choir manual (lower keyboard), play middle C with a 2' stop and then a 2 2/3' stop drawn.] The term "organ registration" refers to the appropriate combination of organ stops, as well as the tonal effect of any combination for a particular piece of music (Williams, 1988, p. 253). By pre-setting pistons, the registrations for a piece of music can be readily available for a service or performance.

German Baroque Pieces

PP11 The first piece performed was *Praeludium in A Minor* by Johann Sebastian Bach. A prelude is an imaginative style piece based on the continuous expansion of a melody and/or rhythm pattern. Single-movement preludes may continuously modulate until an appropriate key is reached (Randel, 1986, p. 653). This piece is one of Bach's early compositions. Bach gave very few suggestions for registrations for his music. The Bach Prelude was played using a registration based on the Dupre edition's suggestions. The Baroque music requires a lighter sound than the French Romantic. This is an example of the piece using a French Romantic registration.

[play short excerpt of piece] [Use ML 64 Piston 3] [Disc, song 3]

This French style registration includes more reeds and foundation pipes than the Baroque. Foundations are the unison and octave sounding stops, excluding the reeds.

PP12

The *Six Chorales,* often called the *Schübler Chorales*, were published after 1745 by Georg (Ga org) Schübler. Each one of the six is a trio arrangement made by Bach of a vocal movement from one of his own cantatas. *Wake, Awake, for Night Is Flying* is a transcription of the tenor solo that is the third movement of Cantata 140, composed in 1731.

Registration

Again, Bach left few registrations and those were only a general idea. The published Schübler chorale preludes make it clear when the pedal is a 16 foot

quasi-continuo bass line or a 4 foot cantus firmus melody line, but do not specify the color of pipe (Williams, 1988, pp. 129-149).

Compare to French Romantic

Listen to this piece with a French Romantic style registration.

[play an excerpt of Wachet auf (measure 13, page 12) using Franck registration for the fugue minus pedal couplers] [memory level 64, piston 8] [Disc, song 4] Now you will hear the entire piece with its German Baroque registration.

[Perform *Wachet auf, ruft uns die Stimme, BWV 645, by Johann Sebastian Bach (1685-1750)*]

Overview of French Romantic Registrations and Organs

PP13 Technological advances during the nineteenth-century changed the art of organ building into an industrial pursuit. The expanded tonal capacity resulted from the application of pneumatic, and later electrical, devices to relieve the key-action,

PP14 and to provide endless wind supplies by steam engines and eventually by electrical blowers which fed into large reservoirs.

PP15 Pneumatic motors were installed to provide the player with pre-set combinations.

[Sean will demonstrate by pushing several pistons] [use Memory Level 63, push different pistons 1, 2, 3, etc.]
[Say: I am able to select and save my registrations prior to a performance]

PP16 The motors also enabled smooth crescendos from soft stops behind closed Venetian shutters to the roar of the tutti or full organ.

[Sean will demonstrate by playing chords on choir manual and slowly closing and opening the shutters] [Memory Level 64 #5]

PP17 The crescendo pedal adds or subtracts the stops gradually in a predetermined order (Williams, 1988, pp. 262-263).

[Sean will demonstate the crescendo pedal by playing a chord chord on the great manual] [No registration]

PP18 [picture of St. Augustin in Paris (1863-1925) Cavaillé-Coll reconstructed organ in 1899.]

A toccata is a virtuoso composition featuring sections of brilliant passage work, with or without imitative or fugal interludes. The principal elements of toccata style are improvisatory harmonies, sweeping scales, broken-chord figuration, and ornamental melodic passages that often range over the entire instrument (Randel, p. 859).

Registration

Eugene Gigout wrote Toccata in 1890. The registration for this piece is different from the German Baroque pieces that you have heard. The French composers used more reeds in the full organ than the Baroque and added 16 foot stops which give a very heavy sound for their pieces. The Swell shades are initially closed but are fully opened by the end of the first section building up to powerful unenclosed sounds.

[Perform *Toccata by* Eugène Gigout (1844-1925)]

PP19 [picture of Franck]

The Prelude, fugue, and variation is one of (César (Saysar) Franck's most exquisite compositions (Arnold, p. 192). The cantabile melody of the Prelude is presented over a simple accompaniment. A short interlude of nine measures anticipates the fugue subject and returns the tonality to B minor. In the last part of the fugue, the primary musical accent seems to fall on the second beat of several successive measures. After the climactic end of the fugue, the serene melody of the Prelude returns over a flowing sixteenth-note accompaniment in the left hand (Arnold, p. 192).

Registration

The Prelude begins with the melody on the swell manual with 8 foot foundation stops and an 8 foot reed. The pedal uses 16 foot and 8 foot flutes with 8 foot stops on the great organ. The short interlude adds reeds and foundations for a full registration. The Fugue uses foundations and reeds as the prelude but this time couples the manuals. The variation returns to the registration of the Prelude. This sound is not as loud as the Gigout piece, but the overall timbre is thicker than the Baroque pieces by Bach.

PP20 picture of St. Clotilde organ – organist from 1859-1890 death [perform piece]

[Perform *Prélude, fugue et variation,* Op. 18, by César Franck (1822-1890)]

PP21 [picture of Messiaen]

One of the most significant and influential composers of the twentieth century was Olivier Messiaen (Arnold, pp. 219-220). Most of Messiaen's music was based on religious themes (Griffiths, n.d., online).

PP22 [Picture of "Last Supper"]

The Celestial Banquet, composed in 1928, is one of his earliest pieces. It is based on the text from the Gospel according to St. John, "He who eats my flesh and drinks my blood has eternal life, and I will raise him up at the last day." The registration is very soft without reeds. The entrance of the pedal represents drops of water which are added to the wine during the Eucharist. Originally, the water was used to dilute the strong wine. Since then, it has developed a spiritual meaning. The water symbolizes the humanity of Christ and the wine symbolizes the divinity of Christ. It also represents the congregation joining their offering with Christ in the Eucharist. The manuals are coupled to the pedal without any pedal stops drawn until the final chord. Repetition provides "intensity and the suggestion of eternal concept which transcends time" (Arnold, pp. 219-220). The "heavenly banquet" is the Eucharist and has a very natural place during the communion of a mass. The piece is very slow with the first chord lasting seven seconds. The long chords begin to function as images of eternity rather than as moments in time (Griffiths, 1985, pp. 29-30).

[Perform *Le Banquet céleste* by Olivier Messiaen (1908-1992)][Luh Bankey]

PP23 [picture of Vierne]

(Loui) Louis Vierne may be considered to be the outstanding organ symphonist of the early twentieth century (Arnold, p. 212). His music is technically demanding, sometimes pianistic, and is consistently orchestral in character. Most of his compositions are concert music and all are original, well developed, vigorous, and tuneful. His harmonies are rich and show a skillful use of contrapuntal devices (Arnold, p. 212).

PP24 His *Symphony Number One* was composed in 1899. It consists of six movements. The theme of the finale, played by pedals under a broken chordal accompaniment, has a simple, almost rustic nature. The second section contains canonic writing. With the re-appearance of the first subject in the tenor, the pedals show a slight reference to the first three notes of the canon and continue it with an almost humorous effect. This piece appeals to the performer and listener by its vigor and tunefulness (Grace, 1919, pp. 168-173). The registration uses a lot of stops: foundations, reeds, mixtures, and couplers. The final chord, of course, is full organ.

PP25 Notre Dame, Paris

[Perform *Finale from* Symphony No. 1, Opus 14 by Louis Vierne (1870-1937)]

PP 26 Reception

PP27 References

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Comparison of German Baroque and French Romantic Organ Registrations

By Camille G. DeVaney

Laurinburg Presbyterian Church

- Schantz Pipe Organ, 37 ranks
- Jones Memorial Organ
- Built by Schantz Organ Company in 1972
- Console – changed to solid-state in 2005

Clock and Organ

Silbermann organ

Su Sung water Clock Tower

Wind Raising Device - bellows

Chests with Pipes

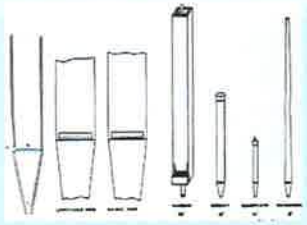
Pipes exposed on each side of the chancel

Keyboard

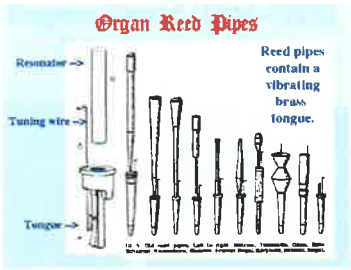
J. S. Bach

and man operating bellows

Organ Flue Pipes



Organ Reed Pipes



Registration

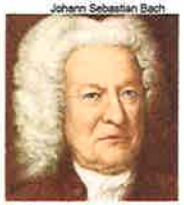
German Baroque (1600-1750)
Bach's 1st job as organist – age 18
1703-1707 Arnstadt, Germany

Johann Sebastian Bach
age 35

- St. Boniface Church
  Bachkirche (now called the Bach Church)

St. Thomas Church, Leipzig
Choirmaster from 1723-1750

Johann Sebastian Bach



1685-1750

French Romantic (1815-1900)
Cavaillé-Coll organ – Basilique
Saint Denis, Paris

Bellows

Pistons –
controls pre-set combinations

Above or below manuals

Above pedal board

Swell Box with shutters

Crescendo Pedal – on the right

Eugène Gigout (1844-1925)
St. Augustin Church, Paris –
Organist 62 years

César Franck (1822-1890)

St. Clotilde
Franck was organist from 1859-1890

Olivier Messiaen (1908-1992)

Leonardo da Vinci - *Last Supper*

Louis Vierne (1870-1937)

In 1900, Vierne won the post of organist at Notre Dame – Paris, France

Notre Dame Trumpet Enchamade and Console

Reception in Fellowship Hall

- Given by members of the Laurinburg Presbyterian Chancel Choir

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